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WORK PLAN ADDENDUM NUMBER 4 EXCAVATION OF ARSENIC CONTAMINATED SOIL
AT SOLID WASTE MANAGEMENT UNIT 5 AND MONITORING WELL ABANDONMENT AT
VARIOUS SOLID WASTE MANAGEMENT UNITS NS MAYPORT FL

5/1/2001
CH2M HILL

**Work Plan Addendum No. 04
Excavation of Arsenic-Contaminated Soil at
Solid Waste Management Unit 5 and
Monitoring Well Abandonment at Various
Solid Waste Management Units**

**Naval Station Mayport
Mayport, Florida**

Revision No. 00

**Contract No. N62467-98-D-0995
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**Submitted to:
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Southern Division**

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	- Certificate of Completion of Quality Control Orientation
	- Certificate of Completion of Environmental Sampling and Testing Orientation
E	Health and Safety Plan
F	SWMU 5 Sampling and Analysis Report

Acronym List

ACO	Administrative Contracting Officer
AFCEE	Air Force Center for Environmental Excellence
bls	below land surface
CCI	CH2M HILL Constructors, Inc.
CFR	Code of Federal Regulations
CTO	Contract Task Order
CO	Contracting Officer
CompQAP	Comprehensive Quality Assurance Plan
COTR	
CPM	Critical Path Method
EISOPQAM	Environmental Investigations Standard Operating Procedures and Quality Assurance Manual
FAC	Florida Administrative Code, Chapter 62-777
FDEP	Florida Department of Environmental Protection
GCTLs	Groundwater Cleanup Target Levels
IRCDQM	Navy Installation Restoration Chemical Data Quality Manual
J.A. Jones	J.A. Jones Environmental Services Company
LDR	Land Disposal Restriction
LUCs	Land Use Controls
mg/kg	milligrams per kilogram
MSDS	Material Safety Data Sheets
NAVFAC	Naval Facilities Engineering Command
NS	Naval Station
NTR	Navy Technical Representative
PPE	personal protective equipment
QA	Quality Assurance
QC	Quality Control
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
ROICC	Resident Officer in Charge of Construction
RPM	Remedial Project Manager
SAP	Sampling and Analysis Plan
SCTLs	Soil Cleanup Target Levels
SOPs	standard operating procedures
SWMU	Solid Waste Management Unit
T&D	transportation and disposal
TtNUS	Tetra Tech NUS, Inc.
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency

1.0 Introduction

CH2M HILL Constructors, Inc. (CCI) with J.A. Jones Environmental Services Company (J.A. Jones) have been contracted by the Department of the Navy, Southern Division Naval Facilities Engineering Command (NAVFAC), to prepare this Work Plan Addendum No. 01, under Response Action Contract No. N62467-98-D-0995, Contract Task Order (CTO) No. 0054. The purpose of this Work Plan Addendum is to outline the procedures to be used to perform excavation of arsenic-contaminated soil at Solid Waste Management Unit (SWMU) 5 and monitoring well abandonment at various SWMUs located at Naval Station (NS) Mayport, Mayport, Florida.

Excavation activities at SWMU 5 will include the identification of all aboveground and underground utilities or other manmade structures, collection of pre-excavation waste characterization soil samples, excavation of two delineated areas of arsenic-contaminated soil, transportation and disposal (T&D) of the arsenic-contaminated material, backfill of the excavated areas with imported clean granular fill, and site restoration. The contaminated soil will be transported by a licensed transporter and disposed at a facility permitted to accept the waste.

Monitoring well abandonment activities will include obtaining the required permits, sealing and filling each monitoring well with grout from the bottom of the well to the ground surface using a tremie pipe, monitoring well head and concrete pad removal, site restoration, containerization of all generated contaminated waste, collection of waste characterization samples and T&D of all generated contaminated waste and construction debris, and preparation and submission of well abandonment records.

This Work Plan Addendum is organized into sections of text and appendices as follows.

Section 1.0 Introduction includes the site histories and project objectives.

Section 2.0 Project Execution Plan details the required scope of work, the project schedule, the communications plan, and the traffic control plan. A detailed project schedule is provided in Appendix A of this Work Plan Addendum. The NS Mayport Basewide Work Plan provides a brief description of the reporting requirements under this Contract.

Section 3.0 Sampling and Analysis Plan (SAP) provides project sample locations, sample collection frequency, and the required laboratory analyses for samples collected during project activities. The NS Mayport Basewide Work Plan and Florida Department of Environmental Protection (FDEP) Standard Operating Procedures (SOPs) outline the sample collection methodology including sample handling, labeling, and required collection of quality assurance (QA) and quality control (QC) samples.

Section 4.0 Waste Management Plan describes the characterization, disposal, onsite management, and transportation of wastes (i.e., arsenic-contaminated soil, well displacement water, decontamination water, etc.) encountered or generated during project activities. Waste management forms are provided in the NS Mayport Basewide Work Plan.

Section 5.0 Environmental Protection Plan contains site-specific environmental provisions and references the NS Mayport Basewide Work Plan, which contains the Environmental Protection Plan for all work completed at NS Mayport.

Section 6.0 Quality Control Plan includes the testing requirements for work described in this Work Plan Addendum. The site-specific project organization for this CTO is also included in this section. The submittal register, testing plan and log, and Project QC Manager documentation are provided in Appendices B, C, and D, respectively. All other QC information is contained in the NS Mayport Basewide Work Plan, including information on the quality administrators, the project organization for the work to be completed at NS Mayport, and the definable features of work for each project site.

The site-specific health and safety plan that addresses the work described in this Work Plan Addendum No. 01 is included in Appendix D. Section 5.0 Site Health and Safety Plan of the NS Mayport Basewide Work Plan addresses project-specific health and safety issues for the remedial activities to be completed at NS Mayport.

1.1 Site History

1.1.1 SWMU 5

SWMU 5 is located southwest of the NS Mayport Turning Basin and is comprised of a landfill operated from 1965 to 1985 as a trench and fill and surface disposal site. Currently, SWMU 5 consists of a prairie hammock, and has an area that is used for vehicle storage by active duty and retired personnel. Both the Navy and United States Coast Guard have electronic installations at this site.

A Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) of Group I landfills at NS Mayport, including SWMU 5, was concluded in March 1996. As a result, nonresidential Land Use Controls (LUCs) were put in place on the SWMU but a Statement of Basis was never promulgated. The LUC was based on the detection of Aroclor-1245, benzo(a)pyrene, and various metals in soil samples at concentrations that exceeded their FDEP Residential Direct Exposure Soil Cleanup Target Levels (SCTLs).

The FDEP Industrial Direct Exposure SCTL for arsenic has changed since the RFI was issued in 1996. The current FDEP Industrial Direct Exposure SCTL for arsenic is 3.7 milligrams per kilogram (mg/kg) as outlined in Table II, Chapter 62-777 of the Florida Administrative Code (FAC). Since no Statement of Basis exists for SWMU 5, it is subject to the SCTLs specified in the current regulations. Two surface soil samples collected at SWMU 5 during the 1996 RFI contained concentrations of arsenic above the current FDEP Industrial Direct Exposure SCTL.

Phase I sampling and analysis of surface soil was performed by TetraTech NUS, Inc. (TtNUS) in March 2000 to delineate arsenic contamination around previous samples MPT-5-SS13 and MPT-5-SS15. A total of eight surface soil samples (from 0 to 1 foot below land surface [bls]) were collected approximately 5 feet from the historic locations in a north, south, east, and west direction. Arsenic concentrations above the FDEP Industrial Direct Exposure SCTL were detected in sample MPT-5-SS1501-01 at 7.3 mg/kg.

Phase II sampling and analysis at SWMU 5 was conducted by TtNUS approximately 1 week later to delineate the arsenic contamination around sample MPT-5-SS1501-01. A total of three surface soil samples were collected from 0 to 1 foot bls. The samples were collected approximately 5 feet from sample location MPT-5-SS1501-01 in a north, east, and west direction. Arsenic concentrations in all three samples were below the FDEP Industrial Direct Exposure SCTL for arsenic.

Data obtained in this investigation indicates arsenic concentrations did not exceed soil screening values from the U.S. Environmental Protection Agency (USEPA) Region IV Ecological Risk Assessment Bulletin (August 11, 1999), but did exceed the FDEP Industrial Direct Exposure SCTL. Arsenic concentrations exceeding the FDEP Industrial Direct Exposure SCTL have been delineated around surface soil samples MPT-5-SS13 and MPT-5-SS15. Remediation of the surface soil exceeding the FDEP Industrial Direct Exposure SCTL was recommended in order to bring SWMU 5 into compliance with LUC requirements for nonresidential land use.

The Sampling and Analysis Report for SWMU 5 prepared by TtNUS in April 2000 outlining the above investigation and containing site plans for the delineated arsenic-contaminated soil is provided in Appendix F of this Work Plan Addendum.

1.1.2 Monitoring Well Abandonment at Various SWMUs

Previous RFIs conducted at various SWMUs on NS Mayport to locate and delineate potential areas of soil and groundwater contamination included the installation of monitoring wells of various construction details. Based on the remedial efforts conducted to date, certain monitoring wells have been designated for well abandonment to remove the possibility of a preferential pathway to subsurface aquifers.

1.2 Project Objectives

The project objective at SWMU 5 is to excavate arsenic-contaminated soil to the delineated limits, transport and dispose of the arsenic-contaminated soil at a facility permitted to accept the waste, and backfill the excavation with imported clean granular fill in order to bring SWMU 5 into compliance with LUC requirements for nonresidential land use.

The project objective for monitoring well abandonment is to abandon each selected monitoring well in accordance with all applicable State of Florida and local regulations to remove the possibility of a preferential pathway to subsurface aquifers.

2.0 Project Execution Plan

The scope of work, project schedule, communications plan and traffic control plan are described in this section.

2.1 Scope of Work

The scope of work for this project includes the following activities:

- Excavation of arsenic-contaminated soil at SWMU 5
 - Mobilization and setup of temporary facilities and site controls
 - Pre-excavation waste characterization of soil
 - Arsenic-contaminated soil excavation
 - T&D of arsenic-contaminated soil
 - Backfill of the excavated areas
 - Site restoration
 - Decontamination
 - De mobilization
 - Source Removal Report
- Monitoring well abandonment
 - Mobilization and setup of temporary facilities and site controls
 - Monitoring well abandonment
 - Monitoring wellhead and concrete pad removal
 - Containerization of contaminated waste
 - Characterization and T&D of contaminated waste
 - Site restoration
 - Decontamination
 - Demobilization
 - Preparation and submission of well abandonment records

2.1.1 Mobilization and Setup of Temporary Facilities and Site Controls

This task will consist of the mobilization of personnel and equipment to each work site and the establishment of temporary facilities, consisting of portable sanitary facilities, a decontamination area, site refuge area, and equipment laydown area. Project management and scheduling activities, including contractor coordination, will be achieved from the CCI/J.A. Jones office located at NS Mayport. Onsite project management will be performed by the CCI/J.A. Jones Project Superintendent who will be onsite during all work completed at NS Mayport.

Prior to the commencement of work at each site, site controls including construction barricades will be installed and the decontamination area and equipment laydown area will be prepared. If necessary, security fencing will also be installed. CCI/J.A. Jones will coordinate with both the NS Mayport Public Works Center and the Resident Officer in Charge of Construction (ROICC) to acquire utility layout plans of each area. Utilities in

the work areas will be marked with paint and stakes, as appropriate. All marked utility lines in construction areas will be uncovered with hand tools. In addition, the progress of subsurface work will be continuously monitored for evidence of obstructions.

Any damage to underground utilities or subsurface structures will be immediately reported to the ROICC and subsequently repaired by CCI/J.A. Jones via methods approved by the ROICC.

2.1.2 Arsenic-contaminated Soil Excavation at SWMU 5

Pre-excavation Waste Characterization of Soil

Pre-excavation soil characterization sampling and analysis will be performed in accordance with Section 3.0 Sampling and Analysis Plan of this Work Plan Addendum approximately 3 weeks prior to excavation to determine the necessary handling and T&D requirements for the arsenic-contaminated soil.

Arsenic-contaminated Soil Excavation

Arsenic-contaminated soil will be excavated for both areas at SWMU 5 to the boundary shown on the drawing included in the TtNUS SWMU 5 Sampling and Analysis Plan (Appendix F). Soil excavation will end at these boundaries. Prior to excavation commencement, these boundaries will be established by TtNUS. Each excavation will be completed at a depth of 2 feet bls. The approximately total volume for both excavation areas is 15 tons.

Excavated soils will be direct-loaded into dump trucks for T&D, as outlined in Section 4.0 Waste Management Plan.

Backfill of the Excavated Areas

The excavated areas will be backfilled with clean granular fill material and returned to original grade. The fill material will be placed in an even distribution. The excavations will be machine-compacted to a degree consistent with the areas' final use which are considered to be non-vehicular areas. Clean granular fill will be furnished from an offsite source(s). Approved-laboratory analytical results from a representative sample of the fill material are required to certify clean fill. One sample from each fill source is required and the required analyses are specified in Section 3.0 Sampling and Analysis Plan. Upon completion of backfill operations, each excavation area will be restored to its previous condition. If grass was present, the site will be graded to provide drainage, then fertilized and seeded with landscape grasses (i.e., bahia) commonly used in the area. The area will then be covered with mulch to retain moisture and to allow the seed to germinate. Top soil is not required; however, the offsite material used for backfill must be capable of supporting vegetation.

2.1.3 Monitoring Well Abandonment

Each monitoring well selected for abandonment will be abandoned in accordance with all applicable State of Florida and local regulations by sealing and filling each well with grout from the bottom of the well to the ground surface using a tremie pipe. All wells will be abandoned by a Florida registered/certified well driller.

Displacement water generated by monitoring well abandonment will be managed in accordance with Section 4.0 Waste Management Plan. Previous RFI-based laboratory analytical results will be utilized to manage the displacement water. Displacement water generated from monitoring wells with historical analytical results below FDEP Groundwater Cleanup Target Levels (GCTLs) will be discharged directly to the ground surface. Displacement water generated from monitoring wells with historical analytical results above FDEP GCTLs will be containerized, characterized in accordance with Section 3.0 Sampling and Analysis Plan, and transported and disposed of in accordance with Section 4.0 Waste Management Plan.

Each monitoring well concrete vault, pad, or other surface completion will be removed and disposed of offsite in accordance with Section 4.0 Waste Management Plan.

Upon completion of monitoring well abandonment, each well location will be restored to the condition of its surroundings (i.e., if in an area of vegetation then the abandoned well would be covered with soil and seeded). A Well Abandonment Record will be completed and submitted for each abandoned monitoring well.

The final list of wells to be abandoned has yet to be determined based on ongoing field investigations at the various SWMUs. Monitoring wells will be selected for abandonment as field activities are completed.

2.1.4 Site Restoration

Areas disturbed during work at each site will be restored to previous condition. Restoration of disturbed areas of asphalt or concrete will include compaction to prevent subsidence, followed by the replacement of like-material asphalt or concrete to restore the site to its original condition. All other areas, structures or utilities affected by site operations will be replaced or repaired.

2.1.5 Decontamination

Personnel and equipment will be properly decontaminated to remove all contamination that may be adhering to personnel or equipment as a result of remedial activities. Any water accumulated during the decontamination process will be containerized in 55-gallon drums, sampled in accordance with Section 3.0 Sampling and Analysis Plan, and managed, transported, and disposed in accordance with Section 4.0 Waste Management Plan. Decontamination of personnel and equipment will be performed in accordance with the site-specific Health and Safety Plan (Appendix E) provided in Appendix D and the applicable provisions of 29 Code of Federal Regulations (CFR) 1910.120.

2.1.6 Demobilization

During demobilization, temporary facilities, utilities, and equipment will be removed from each site. In addition, any debris or solid waste material remaining from construction activities will be removed and properly disposed offsite in accordance with Section 4.0 Waste Management Plan.

2.1.7 Source Removal Report

After completion of the project, a Source Removal Report will be prepared and submitted to the Navy. The Source Removal Report will document the activities performed to complete the scope of work and will include an excavation summary; as-built construction drawings; site photographs; waste characterization documentation; copies of the final manifests and weight tickets; certificate of disposal; and the laboratory analytical results certifying clean fill.

2.2 Project Schedule

The major project activities and estimated durations for each are outlined below.

- Arsenic-contaminated Soil Excavation at SWMU 5
 - Pre-construction meeting/Submittal preparation/Reviews 45 days
 - Pre-Excavation Soil Characterization 21 days
 - Mobilization 1 day
 - Excavation and T&D of Arsenic-contaminated Soils 1 day
 - Site Restoration 1 day
 - Source Removal Report 30 days
- Monitoring Well Abandonment at Various SWMUs
 - Pre-construction Meeting/Submittal Preparation/Reviews 45 days
 - Mobilization 1 day
 - Monitoring Well Abandonment As necessary
 - Well Abandonment Records 30 days

CCI/J.A. Jones anticipates the total project duration (from pre-construction conference through submittal of the final completion report) will be approximately 25 weeks. This proposed schedule may vary depending on the final listing and availability of the monitoring wells to be abandoned and the actual conditions encountered in the field. A schedule for the work to be performed is provided in Appendix A.

2.3 Communications Plan

A communication matrix outlining the lines of communications for Southern Division, NAVFAC and CCI/J.A. Jones is presented in Table 2-1. Table 2-2 provides a project personnel directory.

TABLE 2-1
Communications Matrix

CCI/J.A. Jones Position	Navy Direct Report
Ray Tyler, Executive Sponsor	Eva Clement, CO
R. Scott Newman, Program Manager	Jimmy Jones, COTR
	Richard Stanley, ACO
Phillip Altman, Senior Project Manager	Jimmy Jones, COTR
	Richard Stanley, ACO
Michael Halil, CTO Project Manager	Adrienne Wilson, RPM
	Larry Blackburn, NTR/ROICC
	Cheryl Mitchell, NS Mayport
CO - Contracting Officer	RPM - Remedial Project Manager
ACO - Administrative Contracting Officer	NTR - Navy Technical Representative
COTR - Contracting Officer's Technical Representative	ROICC - Resident Officer in Charge of Construction

TABLE 2-2

Project Personnel Directory

Contact	Company
R. Scott Newman, Program Manager	CH2M HILL Constructors, Inc
Philip Altman, Senior Project Manager	115 Perimeter Center Place, N.E.
Marsha Robinson, Contracts	Suite 700
Administration Manager	Atlanta, GA 30346-1278
Bob Nash, Health and Safety Manager	770/604-9095
Theresa Rojas, QA/QC Manager	
Michael Halil, Project Manager	J.A. Jones Environmental Services Company
	6219 Authority Avenue
	Jacksonville, FL 32221
	904/777-4812
Eva Clement, CO	Southern Division
	Naval Facilities Engineering Command
	P.O. Box 190010
	North Charleston, SC 29419-9010
	843/820-5518
Richard Stanley, ACO	As above
	843/820-5939
Jimmy Jones, COTR	As above
	843/820-5544
Adrienne Wilson, RPM	As above
	843/820-5582
Larry Blackburn, NTR/ROICC	Southern Division
	Naval Facilities Engineering Command
	Resident Officer in Charge of Construction
	P. O. Box 139, Building 13
	NAS Jacksonville, FL 32212-0139
	904/542-5571, ext. 117
	904/237-1868 (mobile)
Cheryl Mitchell, NS Mayport Environmental Manager	Staff Civil Engineer Environmental Division
	Building 1538
	NS Mayport, FL 32227
	904/270-6730

2.4 Traffic Control Plan

Traffic control at each site will be the responsibility of the CCI/J.A. Jones Project Superintendent. CCI/J.A. Jones will minimize disturbance to NS Mayport operations during project activities. CCI/J.A. Jones will consult with onsite Navy personnel to evaluate site access, placement of equipment, and traffic flow to minimize the impact of this work to NS Mayport operations. CCI/J.A. Jones will review all Navy regulations and standard operating procedures regarding vehicle movement and control inside NS Mayport.

3.0 Sampling and Analysis Plan

The SAP provided in this Work Plan Addendum outlines the required sampling activities associated with the removal of arsenic -contaminated soils at SWMU 5 and the abandonment of various monitoring wells at NS Mayport. This SAP outlines the required locations, frequency, and analyses for the samples to be collected prior to and after remedial activities. In addition, this SAP provides the required analyses for disposal characterization for wastes generated during removal activities.

The NS Mayport Basewide Work Plan provides sample collection frequency and sampling methodology for waste characterization and incidental samples collected during the construction phase of the project completed under this contract; sample QA/QC procedures to be maintained during all sample collection activities; and sample equipment decontamination procedures.

Samples will be collected in accordance with the FDEP Standard Operating Procedures (SOPs) for Laboratory Operations and Sample Collection Activities QA-001/92 and the USEPA Region IV Environmental Investigations Standard Operating Procedures and Quality Assurance Manual (EISOPQAM). The more stringent requirements of the two documents will be applied. The sampling team will have an FDEP-approved Comprehensive Quality Assurance Plan (CompQAP) and will be qualified under the Navy Installation Restoration Chemical Data Quality Manual (IRCDQM) sampling requirements.

3.1 Data Quality Objectives for Measurement Data

The data quality objectives (DQOs) for each sampling task described above are listed in Table 3-1. The sampling and analytical requirements, along with the required level of QC and data packages are listed in Table 3-2.

A Navy-, United States Army Corps of Engineers (USACE)-, or Air Force Center for Environmental Excellence (AFCEE)-approved laboratory will be used for all sample analyses. In addition, the laboratory will also have a FL-CompQAP.

TABLE 3-1
Data Quality Objectives

Sampling Activity	Data Quality Objective Category
Waste characterization of the contaminated soils and aqueous waste (offsite laboratory analyses)	Definitive
Backfill characterization (offsite laboratory analyses)	Definitive

TABLE 3-2
Sampling and Analysis Summary

Sample Task	Sample Point	Matrix	Sampling Frequency	Approx Sample No	Sampling Method	Sampling Equipment	TAT	DQO Level/ Data Package Reqmnt	Required Analysis	Analytical Method	Holding Time	Sample Preservtn	Containers
Soil Waste Characterization													
Soil Characterization Sampling	Within 2 areas to be excavated prior to excavation	Soil	Once	1 sample per area	Auger down to 2 ft within area to be excavated (1 grab for volatiles - do not composite)	SS Auger, SS Spoons, SS Bowl	7 days	DQO Level III, CCI Level B	TCLP Volatiles	1311/8260B	14-day TCLP extra; 14-day analysis	Cool to 4°C	(1) 4 oz amber glass
									TCLP Semi-Volatiles	1311/8270C	14-day TCLP extra; 7-day extra; 40-day analysis	Cool to 4°C	(2) 8 oz amber glass
									TCLP Pesticides	1311/8081A	14-day TCLP extra; 7-day extra; 40-day analysis		
									TCLP Herbicides	1311/8151A	14-day TCLP extra; 7-day extra; 40-day analysis		
									TCLP Metals	1311/6010B, 7470A	6 month TCLP extra; 6 month analysis Hg: 28-day TCLP extra; 28-day analysis	Cool to 4°C	(2) 8 oz amber glass
									PCBs	8082	7-day extra; 40-day analysis	Cool to 4°C	(1) 8 oz amber glass
									Ignitability	1030	ASAP		(1) 8 oz amber glass
									Corrosivity	9045A	ASAP		
Reactivity	Chapter 7.3	ASAP											
Aqueous Waste Characterization													
Disposal of Aqueous Waste	Drums/tanks	Water	As needed for disposal	As needed	Grab	Drum thief or dip jar	7 days	DQO Level III, CCI Level B	TCL Volatiles	8260B	14 days	HCl pH< 2; Cool to 4°C	(2) 40 ml vial
									TCL Semi-volatiles	8270C	7 days ext; 40-days analysis	Cool to 4°C	(2) L amber glass
									TCL Pesticides	8081A	7 days ext; 40-days analysis		(2) L amber glass
									Herbicides	8151A	7 days ext; 40-days analysis		(2) L amber glass
									TCL PCBs	8082	7 days ext; 40-days analysis		(2) L amber glass
									TAL Metals	6010B/7470A	180 days; Hg = 28 days	HNO ₃ pH< 2; Cool to 4°C	(1) 500ml HDPE
									COD	410.1	28 days	H ₂ SO ₄ pH< 2; Cool to 4°C	(1) 250ml HDPE
									TPH	418.1	ASAP	HCl pH< 2; Cool to 4°C	(2) L amber glass

TABLE 3-2
Sampling and Analysis Summary

Sample Task	Sample Point	Matrix	Sampling Frequency	Approx Sample No	Sampling Method	Sampling Equipment	TAT	DQO Level/ Data Package Reqmnt	Required Analysis	Analytical Method	Holding Time	Sample Preservtn	Containers
									TSS	160.2	7 days	Cool to 4°C	(1) 250ml HDPE
									pH	150.1	ASAP	Cool to 4°C	(1) 100ml HDPE
									Oil & Grease	413.1	28 days	H ₂ SO ₄ pH< 2; Cool to 4°C	(2) L amber glass
									Reactivity	1010/1020A	ASAP	Cool to 4°C	(2) 1 L amber glass
									Ignitability	9040B	ASAP		
									Corrosivity	Chapter 7.3	ASAP		
Imported Backfill Sources													
Characterization of Fill Material	Once per source per material	Soil	As needed	1	Composite 5 random grabs into 1 sample (1 grab for volatiles)	SS spoon, SS bowl, Encore samplers	7 days	DQO Level III, CCI Level C	TCL Volatiles	5035/8260B	48 Hrs Preserv. 14-day analysis	Cool to 4°C	(3) 5g Encore Samplers
									TCL Semi-Volatiles	8270C	14-day extra; 40-day analysis	Cool to 4°C	(2) 16 oz amber glass
									TCL Pesticides	8081A	14-day extra; 40-day analysis		
									Herbicides	8151A	14-day extra; 40-day analysis		
									PCBs	8082	14-day extra; 40-day analysis	Cool to 4°C	(2) 16 oz amber glass
									TAL Metals	6010A/7471	6 month; Hg 28 days		
									pH	SW-846 9045E	ASAP		

4°C = degrees Celsius
PAH = polycyclic aromatic hydrocarbon
TAL = target analyte list
PCB = polychlorinated biphenyl
COD = Carbonaceous Oxygen Demand
TPH = Total Petroleum Hydrocarbons

FL-PRO = Florida Residual Petroleum Organic
TSS = Total Suspended Solids
SS = stainless steel
DQO = data quality objective
ppm = parts per million

3.2 Waste Characterization and Incidental Wastestream Sampling and Analyses

3.2.1 Soil Characterization

Waste characterization samples will be collected to evaluate the handling, transportation, and disposal requirements of any arsenic-contaminated soil accumulated during soil removal activities. Soil samples will be collected as follows, delivered to a Navy-, USACE-, or AFCEE-approved laboratory that also has an FDEP-approved CompQAP, and analyzed for the parameters listed in Table 3-2.

Soil characterization samples will be collected in-situ from the planned excavation areas prior to disposal. One composite sample will be collected per area or as required by the disposal facility. A minimum of five grabs will be required per composite sample. The samples will be collected as follows:

1. Choose five random points within the in-situ soil area prior to sampling.
2. Auger down at each point to 2 feet which is the expected depth of the contaminated soil.
3. Collect the soil from each auger into a stainless steel bowl. Do not composite volatiles samples. Collect volatiles as a single grab sample from a single point and place into a 4-ounce container. Container must not contain headspace.
4. Homogenize the five samples by the quartering techniques using the stainless steel spoon.
5. Fill the appropriate sample jars approximately three-fourths full with the homogenized sample
6. Close the jars, label, and package the sample for shipment to the lab.

Navy Level B QC and CCI Level B package will be required along with appropriate QC samples for the required waste characterization and incidental wastestream samples. All analytical data will be submitted by both hard copy and electronic files.

3.2.2 Liquid Characterization

Waste characterization samples will be collected to evaluate the handling, transportation, and disposal requirements of generated decontamination or displacement water. It is anticipated that the decontamination liquids and the displacement water will be segregated and containerized in drums or portable tanks. Liquid samples will be collected as follows and delivered to a Navy-, USACE-, or AFCEE-approved laboratory that also has an FDEP-approved CompQAP, and analyzed for the parameters listed on Table 3-2.

A sample will be collected from the drums or tanks using either a dip jar or bailer. The sample containers for volatiles analyses will be filled first. The 40-milliliter vials will be filled so that there is no headspace in each vial. The sample containers for the remaining analyses will then be filled.

Navy Level B QC and CCI Level B package will be required along with appropriate QC samples for the required waste characterization and incidental wastestream samples. All analytical data will be submitted by both hard copy and electronic files.

3.3 Backfill Sampling and Analyses

If no data is provided by the vendor providing the backfill material (sand, topsoil, clay, etc.), then one sample will be collected per source and material. The samples will be collected and delivered to a Navy-, USACE-, or AFCEE-approved laboratory that also has a FL-CompQAP, and analyzed for the parameters listed on Table 3-2.

Procedure for Collecting Volatile Soil Samples

1. Remove the top 6 inches of soil using a stainless spoon.
2. Open the Encore reusable package and remove the core device and cap.
3. Place into the T-handle and core the sample.
4. Remove from the soil, brush off the sides, and put the cap seal onto the sampler.
5. Label and reseal in the original package.
6. Place into cooler for shipment.

Procedure for Collecting Non-Volatile Samples

1. Within the area as the volatile sample was collected as well as four other random points, collect several spoonfuls of the soil into a stainless steel bowl.
2. Homogenize the sample by the quartering techniques using the stainless steel spoon.
3. Fill the appropriate sample jars approximately three-fourths full with the homogenized sample
4. Close the jar, label, and package the sample for shipment to the lab.

3.4 Field Quality Control

Field QC will not be required on disposal samples.

3.5 Analytical Methods

Samples will be collected for analytical methods summarized in Table 3-2.

Preliminary analytical results will be faxed to Jeff Wilmoth and Mike Halil at the following facsimile number per the turnaround times listed in Table 3-2 from day of sample receipt. The final hardcopy data and electronic file will be delivered to Jeff Wilmoth within 14 days of sample receipt.

Jeff Wilmoth

CCI

115 Perimeter Center Place, Suite 700

Atlanta, GA 30346

(770) 604-9182 x268

(678) 604-9282 (fax)

jwilmoth@ch2m.com

and

Mike Halil

CCI/J.A. Jones

6219 Authority Avenue

Cecil Field Commerce Center

Jacksonville, FL 32221

(904) 777-4812

(904) 777-4262 (fax)

mhalil@vnet.net

4.0 Waste Management Plan

The Waste Management Plan describes the waste management requirements and procedures to perform excavation of arsenic-contaminated soil at SWMU 5 and monitoring well abandonment at various SWMUs at NS Mayport. These activities are anticipated to generate the following wastes:

- Excavated arsenic-contaminated soil
- Aqueous waste (including contaminated surface water and decontamination water)
- Contaminated debris (e.g., spent or contaminated sampling equipment)
- Personal protective equipment (PPE)
- Uncontaminated, general construction waste and debris (such as caution tapes, barricades, signs, and materials from well abandonment)

4.1 Waste Characterization

All wastes will be classified (and managed) as required under RCRA and the FDEP hazardous waste regulations. The SAP provides detailed information on the sampling and analysis requirements for waste characterization, as required for disposal. In some cases, offsite facilities may require additional analyses to evaluate the waste stream prior to acceptance. Uncontaminated (or decontaminated) construction wastes and debris will be characterized using process knowledge and generally will be classified as municipal solid waste.

4.2 Waste Profile

Except for aqueous waste discharged to a permitted wastewater treatment plant, waste characterization information will be documented on a waste profile form provided by the offsite treatment or disposal facility as part of the waste acceptance process. Additionally, the waste characterization information for drummed hazardous wastes will be provided to the Public Works Center for their use in preparing the profile. An approved copy of the waste profile will be received prior to offsite transportation of the material. If generator certification and/or signature are required, Navy personnel will provide.

The profile typically requires the following information:

- Generator information including
 - NS Mayport-N4E
 - P.O. Box 280067, Mayport, FL 32228
 - 904/270-6730
- Site name
- Activity generating waste (soil remediation)

- Source of contamination (landfill)
- Physical state of waste (e.g., soil, groundwater, etc.)

4.3 Waste Management

4.3.1 Waste Storage Time Limit

Hazardous waste must be removed within 90 days from the date of generation and other wastes will be removed from the site as soon as possible. The date of generation is the day that a waste is first placed in a container.

4.3.2 Labels

All containers, tanks, and roll-off containers will be labeled, and labels will be visible. Hazardous waste labels will be used where a site has been pre-characterized, and/or known to be contaminated with listed or characteristic hazardous wastes.

Pre-printed "**Hazardous Waste**" labels will include the following information:

- Accumulation start date
- Generator Information:
 - NS Mayport-N4E
 - P.O. Box 280067, Mayport, FL 32228
 - 904/270-6730
- USEPA ID number: FL9170024260
- Waste codes

For containers of less than 110 gallons, the manifest number must be on the label before transporting.

Containers of known non-hazardous waste will have pre-printed "**Non-Hazardous Waste**" labels that include the following information:

- Accumulation start date
- Generator Information:
 - NS Mayport-N4E
 - P.O. Box 280067, Mayport, FL 32228
 - 904/270-6730
- USEPA ID number: FL9170024260
- Waste-specific information (e.g., contaminated groundwater)

When waste characterization is unknown and analytical results are pending, labels indicating "**Analysis Pending**", "**Unknown**", or equivalent will be used until analytical results are received and reviewed, and a waste designation determined. These wastes will contain the similar information provided on other labels, including:

- Accumulation start date

- Generator Information:
 - NS Mayport-N4E
 - P.O. Box 280067, Mayport, FL 32228
 - 904/270-6730
- USEPA ID number: FL9170024260
- Waste-specific information (e.g., contaminated groundwater)

4.3.3 Waste Management Area Requirements

All wastes will be contained in a manner that prevents the spread of contamination. Unless the Navy has designated a specific waste storage area, wastes will be accumulated (and stored) near the project site. These waste storage areas are under CCI/J.A. Jones control.

Waste-specific requirements include:

- Aqueous wastes will be contained in 55-gallon drums or aggregated in portable tanks
- Contaminated soil will be contained in drums, stockpiles, or roll-off boxes.
- Contaminated sampling equipment, PPE, and other debris will be contained in drums. If decontaminated, these wastes can be disposed as uncontaminated debris/waste; if not, these wastes will be managed and disposed at the source concentration.
- Uncontaminated general construction waste and debris will be placed with in containers or placed in storage piles, pending offsite disposal.

Security/Contingency Planning

A barrier, such as barricade tape or temporary fencing, will be provided for hazardous waste accumulation areas and for other waste storage areas that are accessible to the general public. All waste storage areas will also have signs or other means that provide 24-hour emergency contacts and telephone numbers.

Emergency equipment, including fire extinguishers, decontamination equipment, and an alarm system (if radios or mobile phones are not available to all staff working in these areas) will be provided for all hazardous waste storage areas. Spill control equipment (e.g., sorbent pads) will be available in all waste storage areas, and where liquids are transferred from one vessel to another.

Drums (or other small containers)

Drums will be managed as follows:

- Drums of hazardous waste will be transported onsite on wood pallets and will be secured together with non-metallic bonding.
- All drums will be inspected and inventoried upon arrival onsite for signs of contamination and/or deterioration.
- Adequate aisle space (e.g., 30 inches) between drums will be provided to allow the unobstructed movement of personnel and equipment. A row of drums should be no more than two drums wide.

- Each drum will be provided with its own label as described above.
- Drums will remain covered except when removing or adding waste to the drum. Covers will be properly secured at the end of each workday.
- Drums will be disposed of with the contents. If the contents are removed from the drums for offsite transportation and treatment or disposal, the drums will be decontaminated prior to re-use or before leaving the site.

Portable Tanks

Tanks will be managed as follows:

- Tanks will be inspected upon arrival onsite for signs of deterioration and contamination. Any tank arriving onsite with contents will be rejected.
- Tanks will be provided with covers.
- Each tank will be labeled, as described above.
- All tanks will be provided with secondary containment.

Roll-off Boxes

Roll-off boxes will be managed as follows:

- Roll-off boxes will be inspected upon arrival onsite. Any roll-off box arriving onsite with contents will be rejected.
- Roll-off boxes for hazardous or excessively contaminated soils will be provided with disposable liners that will be disposed of as contaminated debris.
- When not in use, securely fastened covers will be installed on all roll-off boxes.
- Old labels will be removed, and new labels will be attached as described above.
- Roll-off containers will be inspected by the transporter after removal of the liner and decontaminated in the event of evidence of liner failure.

4.3.3.1 Stockpiles

Stockpiles will be managed as follows:

- Stockpiled soil or contaminated debris will be provided with secondary containment (i.e., a liner, and perimeter berm to prevent rupture and release or infiltration of liquids), and a cover.
 - Minimum 6-mil polyethylene sheeting will be used for liners and covers.
 - The perimeter berm, typically hay bales placed beneath the liner, will be constructed to allow for collection of any liquids draining from the stockpile.
 - Contaminated liquids that accumulate in the secondary containment will be pumped (or otherwise removed) to a container or tank.

- Covers and perimeter berms will be secured in-place when not in use and at the end of each workday, or as necessary to prevent wind dispersion or run-off from major precipitation events.
- Construction materials for the stockpiles that contact waste will be disposed of as contaminated debris.
- Accumulation start dates will be recorded on a log or a sign located at the stockpile.

4.3.4 Waste/Fuel Storage Area Inspections

Areas used for waste/container storage will be inspected for malfunctions, deterioration, discharges, and leaks that could result in a release. The following inspection schedule will be followed:

- Minimum weekly inspection of containers, tanks, roll-off boxes, stockpiles and applicable secondary containment systems for leaks, spills, signs of corrosion, or signs of general deterioration or releases
- Minimum weekly inspection of fuel storage areas (e.g., look for eroding containment systems and rusting tanks/ancillary equipment)

If operations will suspend for more than 7 days, alternate inspection arrangements will be made, such that waste storage areas are inspected at least weekly. Prior to demobilization, all hazardous wastes or materials will be removed from the site. Inspections will be recorded in the Contractor Quality Control Report, and copies of the report will be maintained onsite, and available for review.

4.4 Waste Transportation

Drums of hazardous wastes will be transported and disposed by the Public Works Center. For roll-off boxes of hazardous waste and non-hazardous wastes, each transportation vehicle and load of waste will be inspected before leaving the site. The quantities of waste leaving the site will be recorded. A contractor licensed for commercial transportation will transport non-hazardous wastes. A copy of the documentation indicating that the selected transporter has appropriate licenses will be received prior to transport of any waste material.

4.4.1 Manifests/Shipping Documentation

Uncontaminated construction waste or debris is typically shipped with only a haul ticket. For contaminated wastes, each load of waste will be manifested prior to leaving the site. The manifest form will include the following information:

- Transporter information including name, address, contact and phone number
- Generator information including name, address, contact, and phone number
- Site name including street/ mailing address
- Description of waste
- Type of container
- Quantity of waste (volumetric estimate)

Additionally, each shipment of waste will also have a waste profile, a Land Disposal Restriction (LDR) notification or certification, and a haul ticket.

If the signed hazardous waste manifest from the designated offsite facility is not received within 35 days, CCI/J.A. Jones will contact the transporter or the designated facility to determine the status of the waste. If the signed hazardous waste manifest has not been received within 45 days, CCI/J.A. Jones will prepare an "Exception Report" for the Navy to submit to the State of Florida, as required under 40 CFR 262.42.

4.4.2 Transporter Responsibilities

In general, the transporter will be responsible for weighing loads of waste at a certified scale. For each load of material, weight measurements will be obtained for each full and empty container or tanker truck (for bulked aqueous wastes). Disposal quantities will be based on the difference of weight measurements between the full and empty container or tanker truck. Weights will be recorded on the shipping documentation. The transporter will provide copies of weight tickets with the final manifest to CCI/J.A. Jones.

The transporter will observe the following practices when hauling and transporting wastes offsite:

- Minimize impacts to general public traffic
- Repair road damage caused by construction and/or hauling traffic
- Clean-up material spilled in transit
- Line and cover trucks/trailers used for hauling contaminated materials to prevent releases and contamination
- Decontaminate vehicles prior to re-use, other than hauling contaminated material
- Seal trucks transporting liquids

All personnel involved in offsite disposal activities will follow safety and spill response procedures outlined in the Health and Safety Plan (Appendix E).

No materials from other projects will be combined with materials from NS Mayport.

4.4.3 Transportation and Disposal Log

Transportation of wastes will be inventoried the day of transportation from the site using the Transportation and Disposal Log. A carbon copy of the initial manifest form for each load will be retained onsite and attached to the Daily Production Report. All required transportation manifests will be prepared by CCI/J.A. Jones and signed by a NS Mayport representative.

4.5 Waste Disposal

Offsite treatment or disposal facilities will use the waste profile and supporting documentation (e.g., analytical results) to determine if they will accept a waste. The

treatment or disposal facility will be responsible for providing a copy of the final waste manifest and for a certificate of treatment or disposal for each load of waste received.

- Soil that contains a hazardous waste will be disposed at a permitted hazardous waste facility (i.e., Subtitle C facility).
- Non-hazardous, contaminated soils, waste, or debris may be recycled as applicable or disposed in a facility permitted to accept the types and quantities of contamination (e.g., Subtitle D landfills).
- Aqueous wastes may be discharged to a permitted waste water treatment plant with written approval from the facility. The point of discharge will be designated by this facility. Otherwise, contained aqueous wastes will be disposed offsite at a facility permitted to accept the waste.
- Uncontaminated, or decontaminated, construction and demolition debris may be sent to municipal landfills, or landfills designated for construction/demolition debris.

4.6 Records/Reporting

The following records and documents will be maintained during this CTO:

- Transportation and offsite disposal records
 - Profiles and associated characterization data
 - Manifests, LDR certification/notification (for hazardous wastes), bills of lading, and other shipping records
 - Offsite facility waste receipts, certificates of disposal/destruction
- Training records
- Inspection records

CCI/J.A. Jones will maintain Material Data Safety Sheets (MSDS) for chemicals and/or hazardous materials brought onsite, including the MSDS for chemicals brought onsite by subcontractors.

4.7 Training

Training requirements for onsite personnel, including subcontractors, are provided in the site-specific Health and Safety Plan (Appendix E).

5.0 Environmental Protection Plan

Section 4.0 Environmental Protection Plan provided in the NS Mayport Basewide Work Plan addresses the Environmental Protection Plan to be instituted during the performance of this CTO at NS Mayport. The following information is supplemental and specific to the activities under this CTO.

5.1 Contingency Planning/Emergency Response

The Health and Safety Plan (Appendix E) provides the general procedures for responding to an emergency (including a release of waste). This section provides additional information specific to the management and transport of wastes.

Hazardous and petroleum waste management areas will contain emergency equipment, including fire extinguishers, decontamination equipment, and an alarm system (if radio equipment is not available to all staff working in storage area).

The following procedures will be followed for the prevention and mitigation of minor spills and releases during construction activities.

CCI/J.A. Jones will immediately contain and cleanup small spills, which include minor spills, leaks, or drips of contamination that have been released beyond the boundaries of the onsite waste or fuel storage area (i.e., have not been released to the environment). Examples of minor spills include: diesel fuel (e.g., less than 2 gallons) spilled to ground during equipment fueling, transmission fluid (e.g., less than 1 quart) leaked from equipment to soil, or an incidental spill of liquid when transferring waste from a drum to a tank.

CCI/J.A. Jones will immediately respond to medium or large spills according to the emergency response procedures in the Health and Safety Plan. These plans are maintained onsite.

5.2 Erosion and Storm Water Control

Erosion and sediment runoff will be minimized during soil excavation activities at NS Mayport through the use of applicable stabilization and structural controls. Stabilization may include temporary seeding, permanent seeding, mulching, geotextiles, sod stabilization, vegetative buffer strips, protection of trees, and preservation of mature vegetation. There are several different structural controls that may be used to control the quality of the storm water coming off the construction site. Structural controls that may be put in place during these remediation construction activities are listed in Table 5-1.

Table 5-1

Structural Control Measures

Control Measure	Location	Description of Control Measure
Silt Fencing	Along the perimeter of the excavation sites. Drainage areas should be less than 0.25 acre per 100 feet of fence length.	To protect streams or wetland areas, to prevent erosion, and to keep sediment onsite. Silt fencing consists of posts with filter fabric stretched across the posts. The lower end of the fence is vertically trenched and covered with back fill. This prevents water from passing by the fence without being filtered. The fabric allows for the water to pass offsite while retaining the sediment onsite.
Check Dams	On the average, where the grade change is more than 2 percent or where possible.	A check dam is a small, temporary dam constructed across a drainage ditch or channel. Its purpose is to slow down the speed of the concentrated flows. The reduced runoff speed will result in less erosion and gulling in the channel and allow the sediment to settle out. The check dams can be built with materials such as straw bales, rock, timber, or other material that will retain water.
Straw Bales	Installed around areas requiring protection such as wetlands and to form a temporary containment.	Straw bales work much like silt fencing and may be used instead of silt fence. They can be used to form a barrier or redirect water. They impede storm water flow. Unlike silt fence, straw bales do not allow water to flow through freely, thus they are used where detention, not just filtration, is necessary.
Limit Entrance/Exit	Designated construction site entrances/exits. The Navy and CCI/J.A. Jones will determine the exact location.	The purpose is to reduce tracking of soil off the site. These entrance/exits are usually constructed of fabric and large stone. The fabric is laid down on the soil; the rock is then applied on top of the fabric. The rough surface will shake and pull the soil off the tires.
Inlet Protection	Located around inlet areas to the storm sewer system.	Filtering material placed around an inlet to a receiving stream to trap sediment. It can be composed of gravel, stone with a wire mesh filter, block and gravel or straw bales.
Stream Crossing	Crossings may be necessary when working near or close to wetland areas. Areas of use will be determined in the field.	Bridge or culvert across a stream or watercourse for short-term use. The purpose is to prevent the damage to watercourses that would occur if vehicles were driven in the wetlands.
Sediment Basins	Sediment basins are required for drainage locations that serve ten (10) or more disturbed acres at one time. For drainage locations serving less than ten (10) acres, smaller sediment basins or sediment traps should be used. At a minimum, silt fences, vegetative buffer strips, or equivalent sediment controls are required.	Sediment basins are either temporary or permanent settling ponds with a controlled storm water release structure. Their function is to collect and store sediment-laden storm water from construction activities long enough to allow the sediment to settle out.

6.0 Quality Control Plan

The QC Plan provided in the NS Mayport Basewide Work Plan details the quality administrators, the project organization for the work to be completed at NS Mayport, and the definable features of work for each project site.

The Submittal Register, included in Appendix B of this Work Plan Addendum, documents submittals in accordance with Appendix B of CCI's Contract Management Plan (CCI, July 1998). CCI, the Navy, or others will approve submittals as identified in the Submittal Register. All approved submittals will be distributed by CCI to the appropriate Navy personnel (CO, ROICC (in duplicate), etc.), to the project site, and to the project file.

The site-specific project organization chart (Figure 6-1) depicts the chain-of-command for this CTO and the individuals responsible for executing the work as indicated. Individual roles and responsibilities of CTO personnel are summarized in Table 6-1.

6.1 Project QC Manager

The Project QC Manager for this work will be Mr. Scott Sloan. Mr. Sloan's Quality Control Orientation and Environmental Sampling and Testing Orientation Certificates of Completion and a copy of the letter appointing Mr. Sloan as the Project QC Manager are presented in Appendix D. Mr. Sloan has performed QC duties and responsibilities for 12 other CTOs under this contract.

6.2 Testing Requirements

Construction testing and environmental analysis laboratories and their certifications; construction testing and environmental sampling and analysis; and test control are described in this section. The Testing Plan and Log is provided in Appendix C.

6.2.1 Identification and Certification of Testing Laboratories

Construction testing and environmental testing laboratories utilized for this CTO project will function as subcontractors, and have not yet been identified.

6.2.2 Construction

Construction testing laboratories will be certified by the National Institute of Standards and Technology-, National Voluntary Laboratory Accreditation Program, American Association of State Highway and Transportation Officials, or American Association for Laboratory Accreditation.

Figure 6-1

Project Organization Chart

Contract Task Order No. 0054

Naval Station Mayport, Jacksonville, Florida

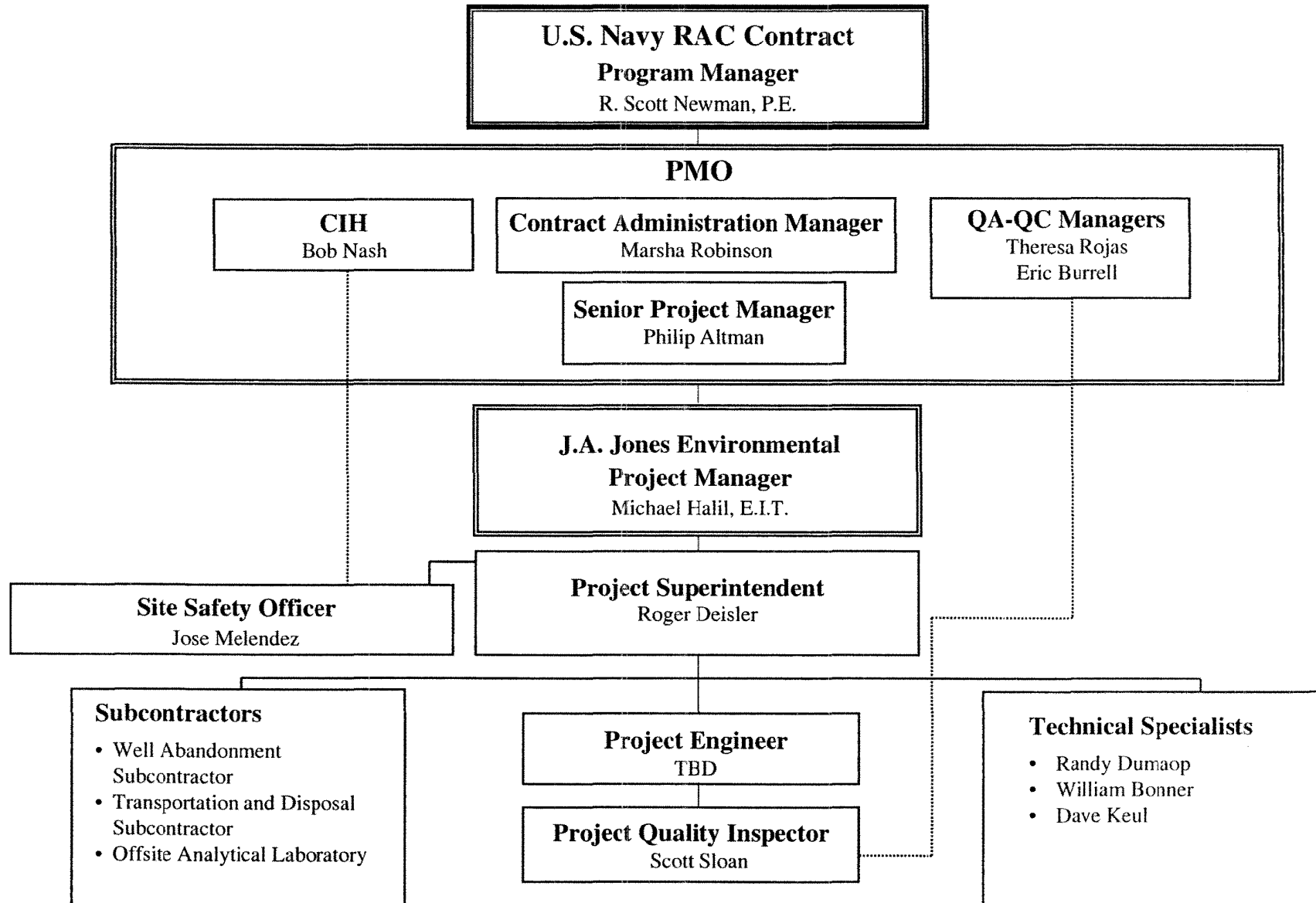


TABLE 6-1

Roles, Responsibilities, and Authorities of Key Project Personnel

Role	Responsibility	Authority
Project Manager	<ul style="list-style-type: none"> • Management and technical direction of work • Communication with Southern Division RPM and NTR • Overview subcontractor performance • Select CTO staff • Develop CTO Work Plan and supporting plans • Meet CTO performance objectives • Prepare status reports 	<ul style="list-style-type: none"> • Approve subcontractor selection • Approve invoices to Southern Division • Approve CTO baseline schedule • Stop work at the site for any reason • Approve payment to vendors and suppliers • Approve payment to subcontractors
Site Superintendent	<ul style="list-style-type: none"> • Responsible for all site activities • Provide direction to subcontractors • Act for Project Manager • Provide daily status reports • Prepare CTO Work Plan • Conduct daily safety meetings • Review subcontractor qualifications • Stop work for unsafe conditions or practices 	<ul style="list-style-type: none"> • Stop work for subcontractors • Approve corrective action for site work-arounds • Approve materials and labor costs for site operations • Resolve subcontractor interface issues • Approve daily and weekly status reports
Resident Engineer	<ul style="list-style-type: none"> • Monitor and oversee subcontractor compliance with scope of work • Review requests for changes in scope of work • Review technical qualifications of subcontractors • Prepare Field Change Requests • Respond to Design Change Notices • Recommend improvements in work techniques or metrics • Recommend work-around to Site Superintendent 	<ul style="list-style-type: none"> • Approve Field Change Requests below ceiling amount • Complete daily compliance report
Field Accountant	<ul style="list-style-type: none"> • Provide project scheduling coordination • Responsible for site cost tracking and reporting • Maintain record of site purchases • Maintain government property records 	<ul style="list-style-type: none"> • Approve payables for disposable items
Transportation and Disposal Coordinator	<ul style="list-style-type: none"> • Develop site specific procedures for transport and disposal practices • Plan and coordinate the transport and disposal of waste • Review subcontractor qualifications • Audit T&D subcontractors compliance with contract requirements 	<ul style="list-style-type: none"> • Approve subcontractors daily report of waste material removed from the site • Approve corrective action plans from T&D subcontractor
Project Assistant	<ul style="list-style-type: none"> • Maintain CTO files and correspondence • Coordinate CTO schedule and monitor deliverables • Maintain change management records • Maintain Action Tracking System log 	<ul style="list-style-type: none"> • Submit Action Tracking System log • Assign correspondence log numbers

TABLE 6-1 (CONTINUED)

Roles, Responsibilities, and Authorities of Key Project Personnel

Role	Responsibility	Authority
Project QC Manager	<ul style="list-style-type: none"> • Monitor and report on subcontractor quality and quantities • Audit subcontractors offsite fabrication • Maintain Submittal Register • Participate in Continuous Improvement Team • Stop work for non-compliant operations • Maintain Lessons Learned Log 	<ul style="list-style-type: none"> • Stop work for non-compliant operations • File daily quantities report • File Lessons Learned Log Sheet • Approve resumption of work for resolved quality issues
Site Health and Safety Specialist	<ul style="list-style-type: none"> • Monitor and report on subcontractor safety and health performance • Record and report safety statistics • Conduct needed site safety and health orientation • Maintain Environmental Log • Stop work for unsafe practices or conditions 	<ul style="list-style-type: none"> • Stop work for unsafe practices or conditions • Approve subcontractor site specific health and safety plan • Set weekly safety objectives • Approve resumption of work for resolved safety issues
Subcontract Specialist	<ul style="list-style-type: none"> • Prepare bid packages • Purchase disposable materials • Maintain subcontract log 	

6.2.3 Environmental

Laboratories performing analysis of environmental samples will be Navy-, USACE-, or AFCEE-approved. The laboratories will also have an FDEP-approved CompQAP.

6.2.4 Testing and Sampling

CC1/J.A. Jones will sample the soil, groundwater, and all generated or accumulated solid and aqueous wastes.

Construction Testing

No construction testing is anticipated for work performed under this CTO work activity, however, soil used to backfill the excavated areas will be placed in approximately 12-inch loose lifts. Soil compaction will be achieved by three passes of earth-moving equipment or vibratory compactor.

Environmental Sampling and Analysis

Environmental sampling and analysis, including QC sampling and analysis, is specified in Section 3.0 Sampling and Analysis Plan of this Work Plan Addendum. Samples will be collected in accordance with USEPA Methods and industry standards of practice. Additionally, personnel that perform sampling will meet the requirements stated in the IRCDQM.

6.2.5 Test Control

Environmental samples will be collected in accordance with USEPA methods and procedures. Other controls will include, but are not limited to, maintaining a chain of custody; proper handling, packing, and shipping; and the use of qualified laboratories. The QC reports required for this project are listed in Table 6-2.

TABLE 6-2
Test Control Submittal Schedule

QC Report/Log	Submittal Frequency
Contractor Production Report	Daily
Contractor QC Report	Daily
Testing Plan and Log	Monthly
QC Meeting Minutes	As Performed
Rework Items List	Monthly
Submittal Register	As Updated

The Project QC Manager will verify the following:

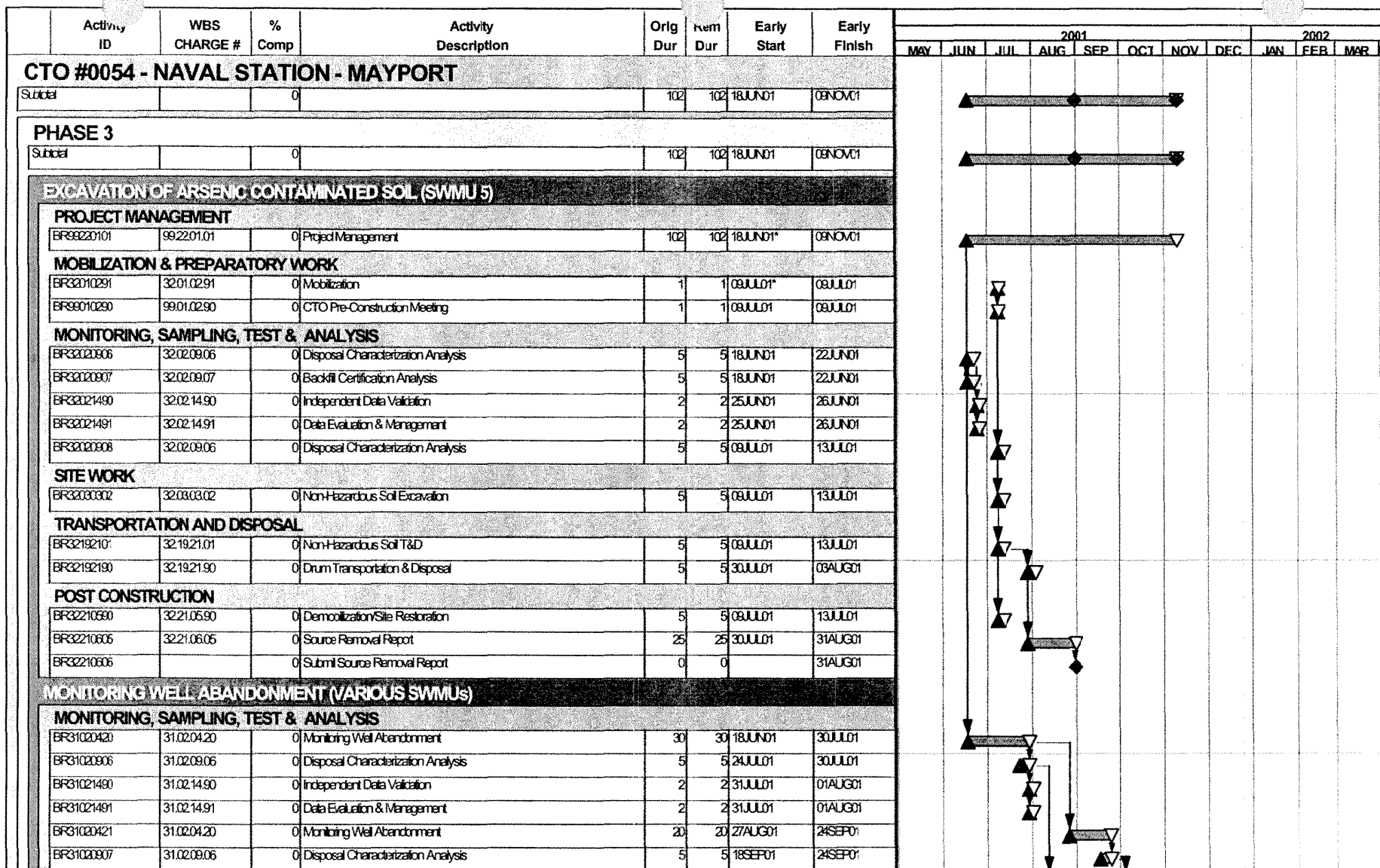
- Facilities and testing equipment are available and comply with testing standards.
- The SWMU 5 excavation depth of 2 feet bls is controlled to within plus or minus 3 inches.
- Well abandonment is conducted in accordance with Florida and local regulations.
- All sampling is conducted in accordance with the FDEP SOPs for Laboratory Operations and Sample Collection Activities, QA-001/92.
- Recording forms, including all of the test documentation requirements, have been prepared and are accurate and complete.

6.3 CTO Support Organizations

The supporting organizations are yet to be determined.

Appendix A

Critical Path Method Project Schedule



Start Date 22AUG98
 Finish Date 02JUL01
 Data Date 27APR01
 Run Date 22MAY01 11:41

Early Bar
 Progress Bar
 Critical Activity

NFAC - C054

Sheet 1 of 2

CTO #0054 - NAVAL STATION - MAYPORT
 CTO COMPLETION SCHEDULE
 NAVY RAC SOUTHERN DIVISION



Activity ID	WBS CHARGE #	% Comp	Activity Description	Orig Dur	Rem Dur	Early Start	Early Finish												
								2001						2002					
								MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	
TRANSPORTATION AND DISPOSAL																			
BR31192190	31.1921.90	0	Drum Transportation & Disposal	5	5	13AUG01	17AUG01				▼								
BR31192191	31.1921.90	0	Drum Transportation & Disposal	5	5	05OCT01	12OCT01						▼						
POST CONSTRUCTION																			
BR31210605	31.2106.05	0	Construction Completion Report	25	25	05OCT01	09NOV01						▼						
BR31210606		0	Submit Construction Completion Report	0	0		09NOV01							▼					

Appendix B
Submittal Register

Submittal Register


Contract Number: N62467-98-D-0995					CTO No.: 0054		CTO Title: SWMU 5/Well Abandonment at Various SWMUs					Location: NS Mayport, Jacksonville, FL				Contractor: CH2M HILL Constructors, Inc./ J.A. Jones Environmental Services Company		
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	
Item Number	Spec Section	Item Description	Para. Number	Approving Authority	Other Reviewers	Submittal Number	Scheduled Submission Date	CCI/JAJ Review Date	CCI/JAJ Disposition	CCI/JAJ Transmit Date	QC Admin Received Date	QC Disposition	QC Admin Transmit Date	Contracting Officer Received	Contracting Officer Disposition	Contracting Officer Return	Remarks	
	DIV 1	General Paragraphs																
		SD-09, Reports	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
1	--	A Work Plan	--	CO/COTR		1	05/24/2001											
2	--	B Narrative	--	CO/COTR		1	05/24/2001											
3	--	C Technical Specifications	--	CO/COTR		1	05/24/2001											
4	--	D Health and Safety Plan	--	CO/COTR		1	05/24/2001											
5	--	E QA/QC Plan	--	CO/COTR		1	05/24/2001											
6	--	F Sampling and Analysis Plan	--	CO/COTR		1	05/24/2001											
7	--	G Decontamination Procedures	--	CO/COTR		1	05/24/2001											
8	--	H Material Safety Data Sheets	--	CO/COTR			As Required										Available Onsite	
		SD-18, Records	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
9	--	A As Built Records	--	ROICC			As Required										Included in CCR	
10	--	B Test Results Summary Report	--	ROICC			Monthly											
11	--	C Daily Production Report	--	ROICC			Daily											
12	--	D Daily QC Report	--	ROICC			Daily											
13	--	E Rework Items List	--	ROICC			Monthly											
14		F Environmental Conditions Report	--	ROICC			06/29/2001										Submitted 2 wks prior to construction	
15	--	G Permits	--	ROICC			As Required											
	--	H Construction Completion Report (CCR)	--	ROICC			As Required										Submitted 60 days following construction	
Excavation of Arsenic-contaminated Soil at SWMU 5																		
	DIV 1	Waste Sampling Requirements																
		SD-08, Statements	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
17	--	A Sample Log	--	ROICC			Monthly											
		SD-12, Field Test Reports	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
18	--	A Disposal Sample Analytical Results	--	ROICC			As Required										Included in CCR	
19	--	B Electronic Copy of All Analytical Results	--	ROICC			As Required										Included in CCR	
		SD-13, Certification	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
20	--	A Laboratory Certification	--	ROICC			As Required										Included in CCR	
	DIV 2	General Excavating, Filling, and Backfilling																
		SD-02, Manufacturer's Catalog Data	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
21	--	A Fill Materials (with Analytical Certification)	--	CCI/JAJ			As Required										Included in CCR/SRR	
22	--	B Grass Seed	--	CCI/JAJ			As Required										Included in CCR	
		SD-18, Records	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
23	--	A Source Removal Report (SRR)	--	ROICC			As Required										Submitted 30 days following construction	
	DIV 2	Transportation and Disposal of Contaminated Material																
		SD-09, Statements	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
24	--	A Treatment Facility Permit	--	ROICC			As Required										Included in CCR	
		SD-19, Records	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
25	--	A Shipment Manifest	--	ROICC			As Required										Included in CCR/SRR	
26	--	B Weight Tickets	--	ROICC			As Required										Included in CCR/SRR	
27	--	C Treatment and Disposal Certificate	--	ROICC			As Required										Included in CCR/SRR	
Well Abandonment at Various SWMUs																		
	DIV 1	Well Abandonment																
		SD-02, Manufacturer's Catalog Data	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
28	--	A Well Abandonment Grout	--	CCI/JAJ			As Required										Included in CCR	
29	--	B Site Restoration Materials	--	CCI/JAJ			As Required										Included in CCR	
		SD-13, Certification	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
30	--	A Well Driller Certification	--	ROICC			As Required										Included in CCR	

Submittal Register

[illegible]



Appendix C

Testing Plan and Log



Appendix D

Project QC Manager Documentation

- Appointing Letter
 - Certificate of Completion of Quality Control Orientation
 - Certificate of Completion of Environmental Sampling and Testing Orientation
- 
- 



CCI NAVY RAC

CH2MHill Constructors Inc.
115 Perimeter Center Place, NE
Suite 700
Atlanta, GA 30346-1278
TEL 770.604.9182
FAX 770.604.9282

May 24, 2001

Mr. Scott Sloan
J.A. Jones Environmental Services Company
6219 Authority Avenue
Jacksonville, Florida 32221

Subject: Contract No. N62467-98-D-0995
Contract Task Order No. 0054, NS Mayport, Jacksonville, FL
Quality Control Manager Letter of Authority

Dear Mr. Sloan:

Herein describes the responsibilities and authority delegated to you in your capacity as the Project QC Manager on Contract Task Order No. 0054 under the Navy RAC Contract No. N62467-98-D-0995.

In this position, you assist and represent the QC Program Manager in continued implementation and enforcement of the Project QC Plans. You are responsible for implementing the QC program as described in the Navy RAC contract. You are responsible for managing the site-specific QC requirements in accordance with the Project QC Plans. You are required to attend the coordination and mutual understanding meeting, conduct QC meetings, perform the three phases of control, perform submittal review, perform submittal approval, ensure testing is performed, and prepare QC certifications and documentation required in the Navy RAC Contract.

Your responsibilities further include identifying and reporting quality problems, rejecting nonconforming materials, initiating corrective actions, and recommending solutions for nonconforming activities.

You have the authority to control or stop further processing, delivery, or installation activities until satisfactory disposition and implementation of corrective actions are achieved.

You have the authority to direct the correction of non-conforming work.

Sincerely,

CH2M HILL Constructors, Inc.

R. Scott Newman, P.E.
Program Manager



CH2MHILL
Constructors, Inc.



CERTIFICATE OF COMPLETION

Scott A. Sloan

of J.A. Jones Environmental Services, Inc.

Has completed the CH2M Hill Constructors, Inc. (CCI) Training Course:

QUALITY CONTROL ORIENTATION

Course Duration: 8 hours

Course Date: May 13, 2000

Course Location: Jacksonville, Florida

Theresa D. Rojas
Program QA/QC Manager



CH2MHILL
Constructors, Inc.



CERTIFICATE OF COMPLETION

Scott A. Sloan

of J.A. Jones Environmental Services, Inc.

**Has completed the CH2M Hill Constructors, Inc. (CCI) Training Course:
ENVIRONMENTAL SAMPLING AND TESTING**

Course Duration: 8 hours

Course Date: May 12, 2000

Course Location: Jacksonville, Florida

Theresa D. Rojas
Program QA/QC Manager

Appendix E

Health and Safety Plan

Health and Safety Plan
Excavation of Arsenic-Contaminated Soil at
Solid Waste Management Unit 5 and
Monitoring Well Abandonment at Various
Solid Waste Management Units
Naval Station Mayport
Mayport, Florida

Contract No. N62467-98-D-0995
Contract Task Order No. 0054

Revision 00

Submitted to:
U.S. Naval Facilities
Engineering Command
Southern Division

Prepared by:



CH2MHILL
Constructors, Inc.

115 Perimeter Center Place, N.E.
Suite 700
Atlanta, GA 30346

May 2001

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Attachments

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2	Project-Specific Chemical Product Hazard Communication Form
3	Chemical-Specific Training Form
4	Material Safety Data Sheets
5	Project Self-Assessment Checklist

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Acronyms

°F	degrees Fahrenheit
ALARA	as low as reasonably achievable
APR	air-purifying respirator
ATL	Atlanta
CCI	CH2M HILL Constructors, Inc.
CNS	central nervous system
CPR	cardiopulmonary resuscitation
CTO	Contract Task Order
dBA	decibel A-rated
DOT	Department of Transportation
FA	first aid
FID	flame ionization detector
GFCI	ground fault circuit interrupter
HAZCOM	hazard communication
HR	heart rate
HSM	Health and Safety Manager
HSP	Health and Safety Plan
IDLH	immediately dangerous to life and health
IDW	investigation-derived waste
lb	pound
LEL	lower explosive limit
mg/m ³	milligrams per cubic meter
MSDS	Material Safety Data Sheet
mW/cm ²	milliwatt per square centimeter
NAS	Naval Air Station
NAVFAC	Naval Facilities Engineering Command
NDG	nuclear density gauge
NS	Naval Station
NSC	National Safety Council
OSHA	Occupational Safety and Health Administration
PAPR	powered air-purifying respirator
PDF	personal flotation device
PID	photoionization detector
PPE	personal protective equipment
ppm	parts per million
RMSF	Rocky Mountain Spotted Fever
SAR	supplied-air respirator

SCBA	self-contained breathing apparatus
SHSS	Site Health and Safety Specialist
SOP	standard of practice
STEL	short-term exposure limit
SZ	support zone
TBD	to be determined
TMCC	truck-mounted crash cushion
TSDf	treatment, storage, and disposal facility

This health and safety plan (HSP) will be kept on the site during field activities and will be reviewed and updated as necessary. The plan adopts, by reference, the standards of practice (SOPs) in the CH2M HILL *Corporate Health and Safety Program, Program and Training Manual*, and CH2M HILL Constructors, Inc. (CCI) Health and Safety Guidelines as appropriate. The Site Health and Safety Specialist (SHSS) is to be familiar with these SOPs and the content of this plan. Site personnel must sign Attachment 1. In addition, this plan adopts procedures in the work plan for the project.

1.0 Project Information and Description

Client or Owner: Southern Division, Naval Facilities Engineering Command (NAVFAC)

Contract Task Order (CTO) No: CTO-0054

CCI Project Manager: Mike Halil/J.A. Jones

Office: Jacksonville, Florida (JAX)

Site Name: Naval Station (NS) Mayport

Site Address: Mayport, Florida

Date Health and Safety Plan Prepared: May 2001

Date(s) of Initial Visit: March 1999

Date(s) of Site Work: June – December 2001

Site Access: Access is through the Main Gate off SR-A1A. The Pass Office is 270-5585.

Site Size: The site occupies about 5 square miles just east of Jacksonville Florida.

Topography: flat coastal plain

Prevailing Weather: hot humid summers with the potential for hurricanes

Site Description and History: Solid Waste Management Unit (SWMU) 5 is located southwest of the NS Mayport Turning Basin and is comprised of a landfill operated from 1965 to 1985 as a trench and fill and surface disposal. Currently, part of the area is used for vehicle storage. Both the Navy and Coast Guard have electronic installations at this site.

Monitoring wells are located in multiple locations at NS Mayport.

2.0 Project Organization and Tasks to be Performed under this Plan

2.1 Project Organization

Client: Southern Division, NAVFAC

CCI:

Project Manager: Mike Halil/ J.A. Jones/JAX

Site Superintendent: to be determined (TBD)

Refer to Section 4.0 for field staff.

Contractors and Subcontractors: Refer to Section 4.2.

2.2 Description of Tasks

Refer to project documents (i.e., work plan) for detailed task information. A health and safety risk analysis has been performed for each task and is incorporated in this HSP through task-specific hazard controls and requirements for monitoring and protection. Tasks in addition to those listed below require an approved amendment to this plan before additional work begins. Refer to Section 10.2 for procedures related to tasks that do not involve hazardous waste operations and emergency response (HAZWOPER).

2.2.1 HAZWOPER-Regulated Tasks

HAZWOPER-regulated tasks include:

- Arsenic contaminated soil excavation, soil sampling
- Site restoration
- Monitoring well abandonment, including concrete pad removal

2.2.2 Non-HAZWOPER-Regulated Tasks

Under specific circumstances, the training and medical monitoring requirements of federal or state HAZWOPER regulations are not applicable. It must be demonstrated that the tasks can be performed without the possibility of exposure in order to use non-HAZWOPER-trained personnel. **Prior approval from the Health and Safety Manager (HSM) is required before these tasks are conducted on regulated hazardous waste sites.**

TASKS	CONTROLS
<ul style="list-style-type: none">• Waste removal/hauling	<ul style="list-style-type: none">• Brief on hazards, limits of access, and emergency procedures• Post contamination areas as appropriate (Section 8.2 for details)• Sample and monitor as appropriate (Section 5.0)

A task hazard analysis is provided in Table 2-1.

TABLE 2-1
Task Hazard Analysis

Potential Hazards	Tasks		
	Arsenic Soil Excavation HS-32	Monitoring Well Abandonment	Loading material for offsite disposal
Arsenic HS-65	X		X
Buried Utilities, Drums, Tanks	X	X	
Compressed Gas HS-63	X	X	
Cranes, Hoist, Rigging HS-44		X	
Earthmoving HS-27	X	X	
Electrical HS-23	X	X	
Excavation HS-32	X		
Fire Protection HS-22	X	X	X
Hand and Power Tools, HS-50	X	X	
Heavy Equipment HS-27	X	X	X
Manual Lifting HS-29	X	X	
Noise >85dBa HS-39	X	X	X
Traffic Control HS-24	X	X	X
Visible lighting	X	X	X

2.2.3 Hazard Controls

This section provides safe work practices and control measures used to reduce or eliminate potential hazards. Table 2-2 lists safe work practices and control measures used to reduce or eliminate potential hazards for the activities associated with this project. Inspection and training requirements for equipment are listed in Table 2-3. These practices and controls are to be implemented by the party in control of either the site or the particular hazard. CCI employees and subcontractors must remain aware of the hazards affecting them regardless of the party responsible for controlling the hazards. CCI employees and subcontractors who do not understand any of these provisions should contact the SHSS for clarification.

In addition to controls specified in this section, activity Self-Assessment Checklist is provided in Attachment 5. This checklist is to be used to assess the adequacy of CCI and subcontractors site-specific safety requirements. Objective of the self-assessment process is to identify gaps in project safety performance, and prompt for corrective actions in addressing gaps. A Self-Assessment Checklist will be completed weekly and returned to the Senior Project Manager, with a copy to HSM.

TABLE 2-2
Recommended Safety Controls

Principal Steps	Potential Safety/Health Hazards	Recommended Controls
Excavation of Arsenic Contaminated Soil at SWMU 5		
General Hazards	Reduce general safety hazards found at most sites; referenced in CH2M HILL SOP HS-20	<p>Site work will be performed during daylight hours whenever possible. Work conducted during hours of darkness will require enough illumination intensity to read a newspaper without difficulty.</p> <p>Hearing protection worn in areas where you need to shout to hear someone within 3 feet.</p> <p>Good housekeeping must be maintained at all times in project work areas.</p> <p>Common paths of travel established and kept free from accumulation of materials.</p> <p>Provide slip-resistant surfaces, ropes, and /or other devices to be used.</p> <p>Specific areas should be designated for the proper storage of materials.</p> <p>Tools, equipment, materials, and supplies will be stored in an orderly manner.</p> <p>As work progresses, scrap and unessential materials must be neatly stored or removed from the work area.</p> <p>Containers should be provided for collecting trash and other debris and will be removed at regular intervals.</p> <p>Spills will be cleaned up. Oil and grease will be cleaned from walking surfaces.</p>
Hazard Communication	Comply with the Hazard Communication Standard informing worker about the chemical to which they may be exposed; referenced in 29 CFR 1926 and CH2M HILL SOP HS-05	<p>Complete an inventory of chemicals brought on site by CCI using the Project-Specific Chemical Hazard Communication Form provided in Attachment 2.</p> <p>Confirm inventory of chemicals brought on site by CCI subcontractors is available.</p> <p>Confirm locations of Material Safety Data Sheets (MSDSs) from client, contractors, and subcontractors for chemicals to which CCI employees potentially are exposed.</p> <p>Before or as the chemicals arrive onsite, obtain an MSDS for each hazardous chemical.</p> <p>Label chemical containers with the identity of the chemical and with hazard warnings, and store properly.</p> <p>Give employees required chemical-specific HAZCOM training using the Chemical-Specific Tracking Form provided in Attachment 3.</p>

TABLE 2-2
Recommended Safety Controls

Principal Steps	Potential Safety/Health Hazards	Recommended Controls
Chemicals		
Arsenic	Exposure to Arsenic above the PEL as listed in 29 CFR 1926.1118; referenced in standard 29 CFR 1910.1018 and CH2M HILL SOP HS-65	<p>Do not enter regulated work areas unless training, medical monitoring, and personal protective equipment (PPE) requirements established by the competent person have been met.</p> <p>Do not eat, drink, smoke, chew tobacco or gum, or apply cosmetics in regulated areas.</p> <p>Avoid skin and eye contact with liquid and particulate arsenic or arsenic trichloride.</p> <p>Arsenic is considered a "Confirmed Human Carcinogen."</p> <p>Arsenic particulates (inorganic metal dust) are odorless. Vapor and gaseous odor varies depending upon specific organic arsenic compound.</p> <p>Respiratory protection and other exposure controls selection will be based on the most recent exposure monitoring results obtained from the SSHS or arsenic competent person.</p>
Physical Conditions		
Buried utilities, drums, tanks	Reduce risk of contacting buried utilities, drums, or tanks during excavations	<p>Contact local utility locator service or Base utilities service before excavations .</p> <p>Perform testing to locate buried tanks, drums or pipelines such as magnetometer or ground penetrating radar survey before excavation.</p>
Compressed gasses	Reduce the hazards when working with compressed gasses	<p>Valve caps must be in place when cylinders are transported, moved, or stored.</p> <p>Cylinder valves must be closed when cylinders are not being used and when cylinders are being moved.</p> <p>Cylinder valves must be closed when cylinders are not being used and when cylinders are being moved.</p> <p>Cylinders must be shielded from welding and cutting operations and positioned to avoid being struck or knocked over; contacting electrical circuits; or exposed to extreme heat sources.</p> <p>Cylinders must be secured on a cradle, basket, or pallet when hoisted; they may not be hoisted by choker slings.</p>

TABLE 2-2
Recommended Safety Controls

Principal Steps	Potential Safety/Health Hazards	Recommended Controls
Energized Electrical	Reduce the hazards when dealing with energized electrical circuits; referenced in 29 CFR 1926.400 and CH2M HILL SOP-23	<p>Only qualified personnel permitted to work on unprotected energized electrical systems.</p> <p>Electrical wiring and equipment will be de-energized prior to conducting work unless it can be demonstrated that de-energizing introduces additional or increased hazards or is unfeasible due to equipment design or operational limitations.</p> <p>Electrical systems will be considered energized until lockout/tagout procedures are implemented.</p>
Fire Protection	To reduce the incidents of fires and provide resources to fight fires; referenced in 29 CFR 1926.150 and CH2M HILL SOP-22	<p>Fire extinguishers will be provided so travel distance from any work area to the nearest extinguisher is less than 100 feet. When 5 gallons or more of a flammable or combustible liquid is being used, an extinguisher must be within 50 feet. Extinguishers must: 1) be maintained in a fully charged and operable condition, 2) be visually inspected each month, and 3) undergo a maintenance check each year.</p> <p>The area in front of extinguishers must be kept clear.</p> <p>Post "Exit" signs over exiting doors, and post "Fire Extinguisher" signs over extinguisher locations.</p> <p>Combustible materials stored outside should be at least 10 feet from any building.</p> <p>Solvent waste and oily rags must be kept in a fire resistant, covered container until removed from the site.</p> <p>Flammable/combustible liquids must be kept in approved containers, and must be stored in an approved storage cabinet.</p>
Manual Lifting	Reduce hazards encountered when lifting loads; referenced in CH2M HILL SOP HS-29	<p>Proper lifting techniques must be used when lifting any object.</p> <p>Plan storage and staging to minimize lifting or carrying distances.</p> <p>Split heavy loads into smaller loads.</p> <p>Use mechanical lifting aids whenever possible.</p> <p>Have someone assist with the lift especially for heavy or awkward loads.</p> <p>Ensure that the path of travel is clear prior to the lift.</p>

TABLE 2-2

Recommended Safety Controls

Principal Steps	Potential Safety/Health Hazards	Recommended Controls
Noise	Reduce the exposure to noise; referenced in 29 CFR 1926.101 and 29CFR 1910.95, and CH2M HILL SOP HS-39	<p>Noise areas will be evaluated at the start of the project and at any time new machinery is added to the process.</p> <p>Hearing protection will be worn whenever levels in excess of 85 dBA are exceeded as in areas where you must raise your voice to communicate at a distance of 3 feet or less.</p> <p>Personnel will be trained in the proper installation techniques for ear protection that fits in the ear canal.</p> <p>Hearing protective devices will be kept clean and sanitary between uses.</p> <p>Noise measurements may be required by the SSHS to determine protection areas. These areas need to be posted with appropriate warning signs.</p>
Traffic Control	Reduce accidents related to control of traffic and impacts; referenced in CH2M HILL SOP HS-24	<p>Exercise caution when exiting traveled way or parking along street; avoid sudden stops, use flashers, etc.</p> <p>Park in a manner that will allow for safe exit from vehicle, and where practicable, park vehicle so that it can serve as a barrier.</p> <p>All staff working adjacent to traveled way or within work area must wear reflective/high-visibility safety vests.</p> <p>Eye protection should be worn to protect from flying debris.</p> <p>Remain aware of factors that influence traffic related hazards and required controls – sun glare, rain, wind, flash flooding, limited sight-distance, hills, curves, guardrails, width of shoulder (i.e., breakdown lane), etc.</p> <p>Always pay attention to moving traffic – never assume drivers are looking out for you</p>
Welding and Cutting	Reduce the physical hazards from welding and cutting; referenced in 29 CFR 1926, Subpart J and CH2M HILL SOP HS-63	<p>Only authorized/trained personnel are permitted to operate welding/cutting equipment.</p> <p>Do not enter areas where welding/cutting operations are taking place unless completely necessary and only after receiving permission from the welding/cutting operator.</p> <p>If you must be present in an area during welding/cutting operations, position yourself behind flash screens or wear glasses/goggles with lenses of appropriate darkness.</p> <p>Do not look directly at the welding/cutting flash or at reflective surfaces surrounding welding/cutting operations.</p>

TABLE 2-2
Recommended Safety Controls

Principal Steps	Potential Safety/Health Hazards	Recommended Controls
Well Abandonment		
General Hazards	Reduce general safety hazards found at most sites referenced CH2M HILL SOP HS-20	<p>Site work will be performed during daylight hours whenever possible. Work conducted during hours of darkness will require enough illumination intensity to read a newspaper without difficulty.</p> <p>Hearing protection worn in areas where you need to shout to hear someone within 3 feet.</p> <p>Good housekeeping must be maintained at all times in project work areas.</p> <p>Common paths of travel established and kept free from accumulation of materials.</p> <p>Provide slip-resistant surfaces, ropes, and /or other devices to be used.</p> <p>Specific areas should be designated for the proper storage of materials.</p> <p>Tools, equipment, materials, and supplies will be stored in an orderly manner.</p> <p>As work progresses, scrap and unessential materials must be neatly stored or removed from the work area.</p> <p>Containers should be provided for collecting trash and other debris and will be removed at regular intervals.</p> <p>Spills will be cleaned up. Oil and grease will be cleaned from walking surfaces.</p>
Hazard Communication	Comply with the Hazard Communication Standard informing worker about the chemical to which they may be exposed referenced 29 CFR 1926 and CH2M HILL SOP HS-05	<p>Complete an inventory of chemicals brought on site by CCI using the Project-Specific Chemical Hazard Communication Form provided in Attachment 2.</p> <p>Confirm inventory of chemicals brought on site by CCI subcontractors is available.</p> <p>Confirm locations of Material Safety Data Sheets (MSDSs) from client, contractors, and subcontractors for chemicals to which CCI employees potentially are exposed.</p> <p>Before or as the chemicals arrive onsite, obtain an MSDS for each hazardous chemical.</p> <p>Label chemical containers with the identity of the chemical and with hazard warnings, and store properly.</p> <p>Give employees required chemical-specific HAZCOM training using the Chemical-Specific Tracking Form provided in Attachment 3.</p>

TABLE 2-2
Recommended Safety Controls

Principal Steps	Potential Safety/Health Hazards	Recommended Controls
Physical Conditions		
Buried utilities, drums, tanks	Reduce risk of contacting buried utilities, drums, or tanks during excavations	<p>Contact local utility locator service or Base utilities service before excavations .</p> <p>Perform testing to locate buried tanks, drums or pipelines such as magnetometer or ground penetrating radar survey before excavation.</p>
Compressed gasses	Reduce the hazards when working with compressed gasses	<p>Valve caps must be in place when cylinders are transported, moved, or stored.</p> <p>Cylinder valves must be closed when cylinders are not being used and when cylinders are being moved.</p> <p>Cylinder valves must be closed when cylinders are not being used and when cylinders are being moved.</p> <p>Cylinders must be shielded from welding and cutting operations and positioned to avoid being struck or knocked over; contacting electrical circuits; or exposed to extreme heat sources.</p> <p>Cylinders must be secured on a cradle, basket, or pallet when hoisted; they may not be hoisted by choker slings.</p>
Energized Electrical	Reduce the hazards when dealing with energized electrical circuits referenced in 29 CFR 1926.400 and CH2M HILL SOP-23.	<p>Only qualified personnel permitted to work on unprotected energized electrical systems.</p> <p>Electrical wiring and equipment will be de-energized prior to conducting work unless it can be demonstrated that de-energizing introduces additional or increased hazards or is unfeasible due to equipment design or operational limitations.</p> <p>Electrical systems will be considered energized until lockout/tagout procedures are implemented.</p>
Fire Protection	To reduce the incidents of fires and provide resources to fight fires referenced in 29 CFR 1926.150 and CH2M HILL SOP-22	<p>Fire extinguishers will be provided so travel distance from any work area to the nearest extinguisher is less than 100 feet. When 5 gallons or more of a flammable or combustible liquid is being used, an extinguisher must be within 50 feet. Extinguishers must: 1) be maintained in a fully charged and operable condition, 2) be visually inspected each month, and 3) undergo a maintenance check each year.</p> <p>The area in front of extinguishers must be kept clear.</p> <p>Combustible materials stored outside should be at least 10 feet from any building.</p> <p>Solvent waste and oily rags must be kept in a fire resistant, covered container until removed from the site.</p> <p>Flammable/combustible liquids must be kept in approved containers, and must be stored in an approved storage cabinet.</p>

TABLE 2-2
Recommended Safety Controls

Principal Steps	Potential Safety/Health Hazards	Recommended Controls
Manual Lifting	Reduce hazards encountered when lifting loads as referenced by CH2M HILL SOP HS-29	<p>Proper lifting techniques must be used when lifting any object.</p> <p>Plan storage and staging to minimize lifting or carrying distances.</p> <p>Split heavy loads into smaller loads.</p> <p>Use mechanical lifting aids whenever possible.</p> <p>Have someone assist with the lift especially for heavy or awkward loads.</p> <p>Ensure that the path of travel is clear prior to the lift.</p>
Noise	Reduce the exposure to noise as referenced by 29 CFR 1926.101 and 29CFR 1910.95, and CH2M HILL SOP HS-39	<p>Noise areas will be evaluated at the start of the project and at any time new machinery is added to the process.</p> <p>Hearing protection will be worn whenever levels in excess of 85 dBA are exceeded as in areas where you must raise your voice to communicate at a distance of 3 feet or less.</p> <p>Personnel will be trained in the proper installation techniques for ear protection that fits in the ear canal.</p> <p>Hearing protective devices will be kept clean and sanitary between uses.</p> <p>Noise measurements may be required by the SSHS to determine protection areas. These areas need to be posted with appropriate warning signs.</p>
Traffic Control	Reduce accidents related to control of traffic and impacts referenced CH2M HILL SOP HS-24	<p>Exercise caution when exiting traveled way or parking along street; avoid sudden stops, use flashers, etc.</p> <p>Park in a manner that will allow for safe exit from vehicle, and where practicable, park vehicle so that it can serve as a barrier.</p> <p>All staff working adjacent to traveled way or within work area must wear reflective/high-visibility safety vests.</p> <p>Eye protection should be worn to protect from flying debris.</p> <p>Remain aware of factors that influence traffic related hazards and required controls – sun glare, rain, wind, flash flooding, limited sight-distance, hills, curves, guardrails, width of shoulder (i.e., breakdown lane), etc.</p> <p>Always pay attention to moving traffic – never assume drivers are looking out for you</p> <p>Work as far from traveled way as possible to avoid creating confusion for drivers.</p>

TABLE 2-2
Recommended Safety Controls

Principal Steps	Potential Safety/Health Hazards	Recommended Controls
Welding and Cutting	Reduce the physical hazards from welding and cutting referenced 29 CFR 1926, Subpart J and CH2M HILL SOP HS-63	<p>Only authorized/trained personnel are permitted to operate welding/cutting equipment.</p> <p>Do not enter areas where welding/cutting operations are taking place unless completely necessary and only after receiving permission from the welding/cutting operator.</p> <p>If you must be present in an area during welding/cutting operations, position yourself behind flash screens or wear glasses/goggles with lenses of appropriate darkness.</p> <p>Do not look directly at the welding/cutting flash or at reflective surfaces.</p>

TABLE 2-3
Equipment Inspection and Training Requirements

Equipment To Be Used	Inspection Requirements	Training Requirements
Trackhoes Backhoes Excavators Bucket Cranes Bull Dozers HS-27	<p>Maintain safe distance from operating equipment and stay alert of equipment movement. Avoid positioning between fixed objects and operating equipment and equipment pinch points, remain outside of equipment swing/turning radius. Pay attention to backup alarms, but not rely on them for protection. Never turn back on operating equipment.</p> <p>Approach operating equipment only after receiving the operator's attention. The operator will acknowledge your presence and stop movement of the equipment. Caution will be used when standing next to idle equipment; when equipment is placed in gear it can lurch forward or backward. Never approach operating equipment from the side or rear where the operator's vision is compromised.</p> <p>When required to work in proximity to operating equipment, wear high-visibility vests to increase visibility to equipment operators. For work performed after daylight hours, vests will be made of reflective material or include a reflective stripe or panel.</p> <p>Do not ride on earthmoving equipment unless it is specifically designed to accommodate passengers. Only ride in seats that are provided for transportation and that are equipped with seat belts.</p> <p>Earthmoving equipment will not be used to lift or lower personnel.</p> <p>If equipment becomes electrically energized, personnel will be instructed not to touch any part of the equipment or person who may be in contact with the electrical current. The utility company or appropriate party will be contacted to have line de-energized prior to approaching the equipment.</p>	Only authorized and trained personnel are permitted to operate earthmoving equipment.
Motor Vehicles (Off highway job site) HS-47	<p>All vehicles will have working safety equipment including: two headlights, brake lights, audible warning device, and a reverse signal audible above surrounding noise levels.</p> <p>Cabs shall be equipped with windshields and powered wipers.</p> <p>All vehicles in use will be inspected at the beginning of each shift and a CCI Heavy Equipment Checklist completed (or the subcontractor's equivalent document.)</p>	Only state licensed personnel may operate company vehicles.

TABLE 2-3
Equipment Inspection and Training Requirements

Equipment To Be Used	Inspection Requirements	Training Requirements
Crane or Other Lifting Devices, HS-44	<p>Maintain safe distance from operating cranes and stay alert of crane movement. Avoid positioning between fixed objects and operating cranes and crane pinch points, remain outside of crane swing and turning radius. Never turn your back on operating cranes.</p> <p>Approach cranes only after receiving the operator's attention. The operator will acknowledge your presence and stop movement of the crane. Never approach operating cranes from the side or rear where the operator's vision is compromised.</p> <p>When required to work in proximity to operating cranes, wear high-visibility vests to increase visibility to operators. For work performed after daylight hours, vests will be made of reflective material or include a reflective stripe or panel.</p> <p>Stay clear of all hoisting operations. Loads will not be hoisted overhead of personnel.</p> <p>Cranes will not be used to lift or lower personnel.</p> <p>If crane becomes electrically energized, personnel will be instructed not to touch any part of the crane or attempt to touch any person who may be in contact with the electrical current. The utility company or appropriate party will be contacted to have line de-energized prior to approaching the crane.</p> <p>Do not exceed hoist load limits.</p> <p>Ensure load is level and stable before hoisting</p> <p>Inspect all rigging equipment prior to use. Do not use defective rigging for any reason.</p> <p>Only use rigging equipment for the purpose it was designed and intended</p> <p>Stay clear of all hoisting operations. Loads will not be hoisted overhead of personnel.</p> <p>Hoists will not be used to lift or lower personnel.</p> <p>Do not exceed hoist load limits.</p> <p>Ensure load is level and stable before hoisting</p> <p>Inspect all rigging equipment prior to use. Do not use defective rigging for any reason.</p> <p>Only use rigging equipment for the purpose it was designed and intended.</p>	Only certified crane operators are permitted to operate cranes..

3.0 Hazard Evaluation and Control

3.1 Heat and Cold Stress

Reference CH2M HILL SOP HS-09, Heat and Cold Stress

3.1.1 Preventing Heat Stress

The following guidelines relate to heat stress prevention:

- Drink 16 ounces of water before beginning work, such as in the morning or after lunch. Disposable (e.g., 4-ounce) cups and water maintained at 50 to 60 degrees Fahrenheit (°F) should be available. Under severe conditions, drink one to two cups every 20 minutes, for a total of 1 to 2 gallons per day. Take regular breaks in a cool, preferably air-conditioned, area. Do not use alcohol in place of water or other nonalcoholic fluids. Decrease your intake of coffee and caffeinated soft drinks during working hours. Monitor for signs of heat stress.
- Acclimate to site work conditions by slowly increasing workloads; e.g., do not begin site work with extremely demanding activities.
- Use cooling devices, such as cooling vests, to aid natural body ventilation. The devices add weight, so their use should be balanced against efficiency.
- Use mobile showers or hose-down facilities to reduce body temperature and cool protective clothing.
- During hot weather, conduct field activities in the early morning or evening if possible.
- Provide adequate shelter to protect personnel against radiant heat (sun, flames, hot metal), which can decrease physical efficiency and increase the probability of heat stress.
- In hot weather, rotate shifts of workers.
- Maintain good hygiene standards by frequently changing clothing and by showering. Clothing should be permitted to dry during rest periods. Persons who notice skin problems should consult medical personnel.

3.1.2 Symptoms and Treatment of Heat Stress

The symptoms of heat stress are listed in Table 3-1.

TABLE 3-1
Symptoms and Treatment of Heat Stress

	Heat Syncope	Heat Rash (<i>miliaria rubra</i> , "prickly heat")	Heat Cramps	Heat Exhaustion	Heat Stroke
Signs and Symptoms	Sluggishness or fainting while standing erect or immobile in heat.	Profuse tiny raised red blister-like vesicles on affected areas, along with prickling sensations during heat exposure.	Painful spasms in muscles used during work (arms, legs, or abdomen); onset during or after work hours.	Fatigue, nausea, headache, giddiness; skin clammy and moist; complexion pale, muddy, or flushed; may faint on standing; rapid thready pulse and low blood pressure; oral temperature normal or low	Red, hot, dry skin; dizziness; confusion; rapid breathing and pulse; high oral temperature.
Treatment	Remove to cooler area. Rest lying down. Increase fluid intake. Recovery usually is prompt and complete.	Use mild drying lotions and powders, and keep skin clean for drying skin and preventing infection.	Remove to cooler area. Rest lying down. Increase fluid intake.	Remove to cooler area. Rest lying down, with head in low position. Administer fluids by mouth. Seek medical attention.	Cool rapidly by soaking in cool—but not cold—water. Call ambulance, and get medical attention immediately!

3.1.3 Heat-Stress Monitoring

For field activities part of ongoing site work activities in hot weather, the following procedures should be used to monitor the body's physiological response to heat and to estimate the work-cycle/rest-cycle when workers are performing moderate levels of work. These procedures should be considered when the ambient air temperature exceeds 70°F, the relative humidity is high (greater than 50 percent), or when the workers exhibit symptoms of heat stress.

The heart rate (HR) should be measured by the radial pulse for 30 seconds, as early as possible in the resting period. The HR at the beginning of the rest period should not exceed 110 beats per minute, or 20 beats per minute above resting pulse. If the HR is higher, the next work period should be shortened by 33 percent, while the length of the rest period stays the same. If the pulse rate still exceeds 110 beats per minute at the beginning of the next rest period, the following work cycle should be further shortened by 33 percent. The procedure is continued until the rate is maintained below 110 beats per minute, or 20 beats per minute above resting pulse.

3.1.4 Preventing Cold Stress

The following guidelines relate to cold stress prevention:

- Be aware of the symptoms of cold-related disorders, and *wear proper clothing for the anticipated fieldwork*.
- Consider monitoring the work conditions and adjusting the work schedule, using guidelines developed by the U.S. Army (wind-chill index) and the National Safety Council (NSC).
- **Wind-Chill Index.** This measure relates the dry bulb temperature and the wind velocity. It is used only to estimate the combined effect of wind and low air temperatures on exposed skin. The wind-chill index sometimes is limited in its usefulness because the index does not take into account the body part that is exposed, the level of activity, or the amount or type of clothing worn. For those reasons, it is used only as a guideline to warn workers when they are in a situation that can cause cold-related illnesses. Used in conjunction with the NSC guidelines, the wind-chill index provides a starting point for adjusting work and warm-up schedules.
- **NSC Guidelines for Work and Warm-Up Schedules.** The cold-exposure limits recommended by the NSC can be used in conjunction with the wind-chill index to estimate work and warm-up schedules for fieldwork. The guidelines are not absolute; *workers should be monitored for symptoms of cold-related illness*. If symptoms are not observed, the work duration can be increased.
- The wind-chill index and the NSC guidelines are in the CH2M HILL *Corporate Health and Safety Program, Program and Training Manual*, SOP HS-09.

3.1.5 Symptoms and Treatment of Cold Stress

The symptoms and treatment of cold stress are listed in Table 3-2.

TABLE 3-2
Symptoms and Treatment of Cold Stress

	Immersion (Trench) Foot	Frostbite	Hypothermia
Signs and Symptoms	Feet discolored and painful; infection and swelling present.	Blanched, white, waxy skin, but tissue resilient; tissue cold and pale.	Shivering, apathy, sleepiness; rapid drop in body temperature; glassy stare; slow pulse; slow respiration.
Treatment	Seek medical treatment immediately.	Remove victim to a warm place. Rewarm area quickly in warm—but not hot—water. Have victim drink warm fluids, but not coffee or alcohol. Do not break blisters. Elevate the injured area, and get medical attention.	Remove victim to a warm place. Have victim drink warm fluids, but not coffee or alcohol. Get medical attention.

3.2 Locating Buried Utilities

3.2.1 Local Utility Mark-Out Service

The Base Civil Engineer will be responsible for marking utilities.

3.2.2 Procedures for Locating Buried Utilities

Procedures for locating buried utilities are listed as follows:

- Where available, obtain utility diagrams for the facility.
- Review locations of sanitary and storm sewers, electrical conduits, water supply lines, natural-gas lines, and fuel tanks and lines.
- Review proposed locations of intrusive work with facility personnel knowledgeable of locations of utilities. Check locations against information from utility mark-out service.
- Where necessary, clear locations with a utility-locating instrument (e.g., metal detector).
- Where necessary (e.g., uncertainty about utility locations), excavation or drilling of the upper depth interval should be performed manually. Monitor for signs of utilities during advancement of intrusive work (e.g., sudden change in advancement).
- When the client or other onsite party is responsible for determining the presence and locations of buried utilities, the SHSS should confirm that arrangement.

3.3 Biological Hazards and Controls

Biological hazards and controls are listed in Table 3-3.

TABLE 3-3
Biological Hazards and Controls

Hazard and Location	Control Measures
Snakes typically are found in underbrush and tall grassy areas.	If you encounter a snake, stay calm and look around; there may be other snakes. Turn around and walk away on the same path you used to approach the area. If a person is bitten by a snake, wash and immobilize the injured area, keeping it lower than the heart if possible. Seek medical attention immediately. DO NOT apply ice, cut the wound, or apply a tourniquet. Carry the victim or have him/her walk slowly if the victim must be moved. Try to identify the type of snake: note color, size, patterns, and markings.
Poison ivy, poison oak, and poison sumac typically are found in brush or wooded areas. They are more commonly found in moist areas or along the edges of wooded areas.	Become familiar with the identity of these plants. Wear protective clothing that covers exposed skin and clothes. Avoid contact with plants and the outside of protective clothing. If skin contacts a plant, wash the area with soap and water immediately. If the reaction is severe or worsens, seek medical attention.
Exposure to bloodborne pathogens may occur when rendering first aid/CPR, when coming into contact with medical or other potentially infectious material, or coming into contact with landfill waste or waste streams containing infectious material.	Training is required before a task involving potential exposure is performed. Exposure controls and personal protective equipment (PPE) are required as specified in CH2M HILL SOP HS-36, <i>Bloodborne Pathogens</i> . Hepatitis B vaccination must be offered before the person participates in a task where exposure is a possibility.

TABLE 3-3
Biological Hazards and Controls

Hazard and Location	Control Measures
Bees and other stinging insects may be encountered almost anywhere and may present a serious hazard, particularly to people who are allergic.	Watch for and avoid nests. Keep exposed skin to a minimum. Carry a kit if you have had allergic reactions in the past, and inform the SHSS and/or the buddy. If a stinger is present, remove it carefully with tweezers. Wash and disinfect the wound, cover it, and apply ice. Watch for allergic reaction; seek medical attention if a reaction develops.
Other potential biological hazards	None anticipated.

3.4 Tick Bites

Reference CH2M HILL HS-03, Tick Bites

Ticks typically are in wooded areas, bushes, tall grass, and brush. Ticks are black, black and red, or brown and can be up to one-quarter inch in size.

Prevention against tick bites includes avoiding tick areas; wearing tightly woven light-colored clothing with long sleeves and wearing pant legs tucked into boots or socks; spraying **only outside** of clothing with insect repellent containing permethrin or permanone, and spraying skin with DEET; and checking yourself frequently for ticks and showering as soon as possible. To prevent chemical repellents from interfering with sample analyses, exercise care while using repellents during the collection and handling of environmental samples.

If bitten by a tick, carefully remove the tick with tweezers, grasping the tick as close as possible to the point of attachment while being careful not to crush the tick. After removing the tick, wash your hands and disinfect and press the bite area. The removed tick should be saved. Report the bite to human resources personnel.

Look for symptoms of Lyme disease or Rocky Mountain spotted fever (RMSF): Lyme - a rash that looks like a bullseye with a small welt in the center; RMSF - a rash of red spots under the skin 3 to 10 days after the tick bite. In both cases, chills, fever, headache, fatigue, stiff neck, bone pain may develop. If symptoms appear, seek medical attention.

3.5 Radiological Hazards and Controls

Refer to CH2M HILL's Corporate Health and Safety Program, Program and Training Manual, and Corporate Health and Safety Program, Radiation Protection Program Manual, for standards of practice for operating in contaminated areas. There are no known radiological hazards associated with this project.

3.6 Hazards Posed by Chemicals Brought on the Site

3.6.1 Hazard Communication

Reference CH2M HILL Hazard Communication Manual

CH2M HILL's *Hazard Communication Program Manual*, which is available from area or regional offices and from the Corporate Human Resources Department in Denver, Colorado. The project manager is to request MSDSs from the client or from the contractors and the subcontractors for chemicals to which CCI employees potentially are exposed. The SHSS is to do the following:

- Give employees required site-specific hazard communication (HAZCOM) training.
- Confirm that inventory of chemicals brought on the site by subcontractors is available.
- Before or as chemicals arrive on the site, obtain an MSDS for each hazardous chemical.
- Label chemical containers with identity of chemical and with hazard warnings, if any.

Chemical products listed in Table 3-4 will be used on site. Refer to Attachment 2 for MSDSs.

TABLE 3-4
Chemical Hazards

Chemical	Quantity	Location
Methanol (decontamination)	4 liters, flammable	Support/Decontamination Zone
Hexane (decontamination)	4 liters, flammable	Support/Decontamination Zone
Alconox/Liquinox (detergent)	< 1 liter, powder/liquid	Support/Decontamination Zone

3.6.2 Shipping and Transportation of Chemical Products

Reference CH2M HILL's Procedures for Shipping and Transporting Dangerous Goods

Nearly all chemicals brought to the site are considered hazardous materials by the DOT. All staff who ship the materials or transport them by road must receive the CH2M HILL training in shipping dangerous goods. Hazardous materials that are shipped (e.g., via Federal Express) or are transported by road must be properly identified, labeled, packed, and documented by trained staff. Contact the HSM or the Equipment Coordinator for additional information.

3.7 Contaminants of Concern

Reference Project Files for More-Detailed Contaminant Information

Contaminants of concern are listed in Table 3-5.

TABLE 3-5
Contaminants of Concern

Contaminant	Maximum ^a Concentration	Exposure Limit ^b	IDLH ^c	Symptoms and Effects of Exposure	PIP ^d (eV)
Arsenic (Excavation SWMU 5)	SB: 7.3 mg/kg	0.01 mg/m ³	5 Ca	Ulceration of nasal septum, respiratory irritation, dermatitis, gastrointestinal disturbances, peripheral neuropathy, hyperpigmentation	NA

Footnotes:

^a Specify sample-designation and media: SB (Soil Boring),

^b Appropriate value of PEL, REL, or TLV listed.

^c IDLH = immediately dangerous to life and health (units are the same as specified "Exposure Limit" units for that contaminant); NL = No limit found in reference materials; CA = Potential occupational carcinogen.

^d PIP = photoionization potential; NA = Not applicable; UK = Unknown.

mg/m³ = milligram per cubic meter

eV = electron volt

3.8 Potential Routes of Exposure

Potential routes of exposure include:

- **Dermal:** Contact with contaminated media. This route of exposure is minimized through proper use of PPE, as specified in Section 5.0.
- **Inhalation:** Vapors and contaminated particulates. This route of exposure is minimized through proper respiratory protection and monitoring, as specified in Sections 5.0 and 6.0, respectively.
- **Other:** Inadvertent ingestion of contaminated media. This route should not present a concern if good hygiene practices are followed (e.g., wash hands and face before eating, drinking, or smoking).

4.0 Personnel

4.1 CCI Employee Medical Surveillance and Training

Reference CH2M HILL SOP HS-01, Medical Surveillance, and HS-02, Health and Safety Training

The employees listed in Table 4-1 are enrolled in the CH2M HILL Comprehensive Health and Safety Program and meet state and federal hazardous waste operations requirements for 40-hour initial training, 3-day on-the-job experience, and 8-hour annual refresher training. Employees designated "SHSS" have received 8 hours of supervisor and instrument training and can serve as SHSS for the level of protection indicated. An SHSS with a level designation (D, C, B) equal to or greater than the level of protection being used must be present during all tasks performed in exclusion or decontamination zones that involve the potential for exposure to health and safety hazards. Employees designated "FA-CPR" are currently certified by the American Red Cross, or equivalent, in first aid and cardiopulmonary resuscitation (CPR). At least one FA-CPR designated employee must be present during all tasks performed in exclusion or decontamination zones that involve the potential for exposure to health and safety hazards. The employees listed below are currently active in a medical surveillance program that meets state and federal regulatory requirements for hazardous waste operations. Certain tasks (e.g., confined-space entry) and contaminants (e.g., lead) may require additional training and medical monitoring.

Pregnant employees are to be informed of and are to follow the procedures in CH2M HILL's SOP HS-04, *Reproduction Protection*, including obtaining a physician's statement of the employee's ability to perform hazardous activities, before being assigned fieldwork.

TABLE 4-1
Project Personnel Safety Certifications

Employee Name	Office	Responsibility	SHSS/FA-CPR
Mike Halil/J.A. Jones	JAX	Project Manager	
TBD		Site Superintendent	
Jose Melendez/J.A. Jones	JAX	SHSS	SSC Level C, FA-CPR
Eric Burrell	ATL	QC Manager	SC-HW SHSS; FA-CPR
Robert Nash	ATL	H&S Manager	SC-HW/C SHSS; FA-CPR

4.2 Field Team Chain of Command and Communication Procedures

4.2.1 Client

Contact Name: Eva Clement, Southern Division, NAVFAC

CCI

Project Manager: Mike Halil/J.A.Jones

Health and Safety Manager: Robert Nash/ATL

Site Superintendent: TBD

Site Health and Safety Specialist: TBD

The SHSS is responsible for contacting the site superintendent and the project manager. In general, the project manager either will contact or will identify the client contact. The HSM should be contacted as appropriate. The SHSS or the project manager must notify the client and the HSM when a serious injury or a death occurs or when health and safety inspections by OSHA or other agencies are conducted. Refer to Sections 10 through 12 for emergency procedures and phone numbers.

4.2.2 Subcontractors

Reference Section 3, Corporate Health and Safety Program Manual

When specified in the project documents (e.g., contract), this plan may cover CCI subcontractors. However, this plan does not address hazards associated with tasks and equipment that the subcontractor has expertise in (e.g., operation of drill rig). Specialty subcontractors are responsible for health and safety procedures and plans specific to their work. Specialty subcontractors are to submit plans to CCI for review and approval before the start of fieldwork. Subcontractors must comply with the established health and safety plan(s). CCI must monitor and enforce compliance with the established plan(s).

General health and safety communication with subcontractors contracted with CCI and covered by this plan is to be conducted as follows:

- Request that the subcontractor, if a specialty subcontractor, submit a safety or health plan applicable to their expertise (e.g., drill-rig safety plan or nuclear density gauge [NDG] health plan); attach the reviewed plan.
- Supply subcontractors with a copy of this plan, and brief them on its provisions.
- Direct health and safety communication to the subcontractor-designated safety representative.
- Notify the subcontractor-designated representative if a violation of the plan(s) is observed. Specialty subcontractors are responsible for mitigating hazards in which they have expertise.
- If a hazard condition persists, inform the subcontractor. If the hazard is not mitigated, stop affected work as a last resort and notify the project manager.
- When an apparent imminent danger exists, promptly remove all affected personnel. Notify the project manager.
- Make clear that consistent violations of the health and safety plan by a subcontractor may result in termination of the subcontract.

5.0 Personal Protective Equipment

Reference CH2M HILL SOP HS-07, Personal Protective Equipment; HS-08, Respiratory Protection

5.1 PPE Specification

TABLE 5-1
PPE Specifications^a

Task	Level	Body	Head	Respirator ^b
General work uniform when no chemical exposure is anticipated	D	Work clothes; steel-toe, steel-shank leather work boots; work gloves	Hardhat ^c Safety glasses Ear protection ^d	None required
Soil Excavation and Well abandonment	Modified D	COVERALLS: Uncoated Tyvek® BOOTS: Steel-toe, steel-shank chemical-resistant boots OR steel-toe, steel-shank leather work boots with outer rubber boot covers GLOVES: Inner surgical nitrile glove & outer leather or arimid-fiber glove.	Hardhat ^c Splash shield ^c Safety glasses Ear protection ^d	None required
NOT APPROVED FOR THIS ACTIVITY	C	COVERALLS: Polycoated Tyvek® BOOTS: Steel-toe, steel-shank chemical-resistant boots OR steel-toe, steel-shank leather work boots with outer rubber boot covers GLOVES: Inner surgical-style AND outer chemical-resistant nitrile glove.	Hardhat ^c Splash shield ^c Ear protection ^d Spectacle inserts	APR, full face, MSA Ultratwin or equivalent; with GME-H ^e cartridges or equivalent
NOT APPROVED FOR THIS ACTIVITY	B	COVERALLS: Polycoated Tyvek® BOOTS: Steel toe, steel-shank chemical-resistant boots OR steel-toe, steel-shank leather work boots with outer rubber boot covers GLOVES: Inner surgical-style AND outer chemical-resistant nitrile glove.	Hardhat ^c Splash shield ^c Ear protection ^d Spectacle inserts	Pressure demand self-contained breathing apparatus (SCBA)

^a Modifications are as indicated. CCI will provide PPE to only CCI employees.

^b No facial hair that would interfere with respirator fit is permitted.

^c Hardhat and splash-shield areas are to determined by the SHSS.

^d Ear protection will be worn while around drill rigs or noise-producing equipment or when conversations cannot be held at distances of 3 feet or less without shouting.

^e The GME-H cartridge is the new standard-issue cartridge. Available stock of the previously standard GMC-H cartridges may be used for tasks covered by this plan.

5.2 Upgrading or Downgrading Level of Protection

The reasons for upgrading or downgrading the PPE level are as follows:

- Upgrade
 - Request from individual performing task
 - Change in work that increase contact/potential contact with hazardous materials
 - Occurrence or likely occurrence of gas or vapor emission
 - Known or suspected presence of dermal hazards
 - Instrument action levels (Section 6) exceeded

- Downgrade
 - New information indicating that situation is less hazardous than originally thought
 - Change in site conditions that decreases the hazard
 - Change in work task that will reduce contact with hazardous materials

Performing a task that requires an upgrade to a higher level of protection (e.g., Level D to Level C) is permitted only when the PPE requirements have been specified in Section 5.0 and an SHSS who meets the requirements specified in Section 4.1 is present.

6.0 Air Monitoring Specifications

Reference CH2M HILL SOP HS-06, Air Monitoring

Air sampling may be required by other OSHA regulations where exposure to certain contaminants may exist. Air sampling typically is required when site contaminants include lead, cadmium, arsenic, asbestos, and certain volatile organic compounds. Contact the HSM immediately if these contaminants are encountered.

Real time air monitoring will be performed as necessary, but is not anticipated. If required, results must be sent immediately to the HSM. Regulations may require reporting to monitored personnel. Results reported to: HSM: Robert Nash/ATL.

7.0 Decontamination

Reference CH2M HILL SOP HS-13, Decontamination

The SHSS must monitor the effectiveness of the decontamination procedures. Decontamination procedures found to be ineffective will be modified by the SHSS.

7.1 Decontamination Specifications

Decontamination specifications are listed in Table 7-1.

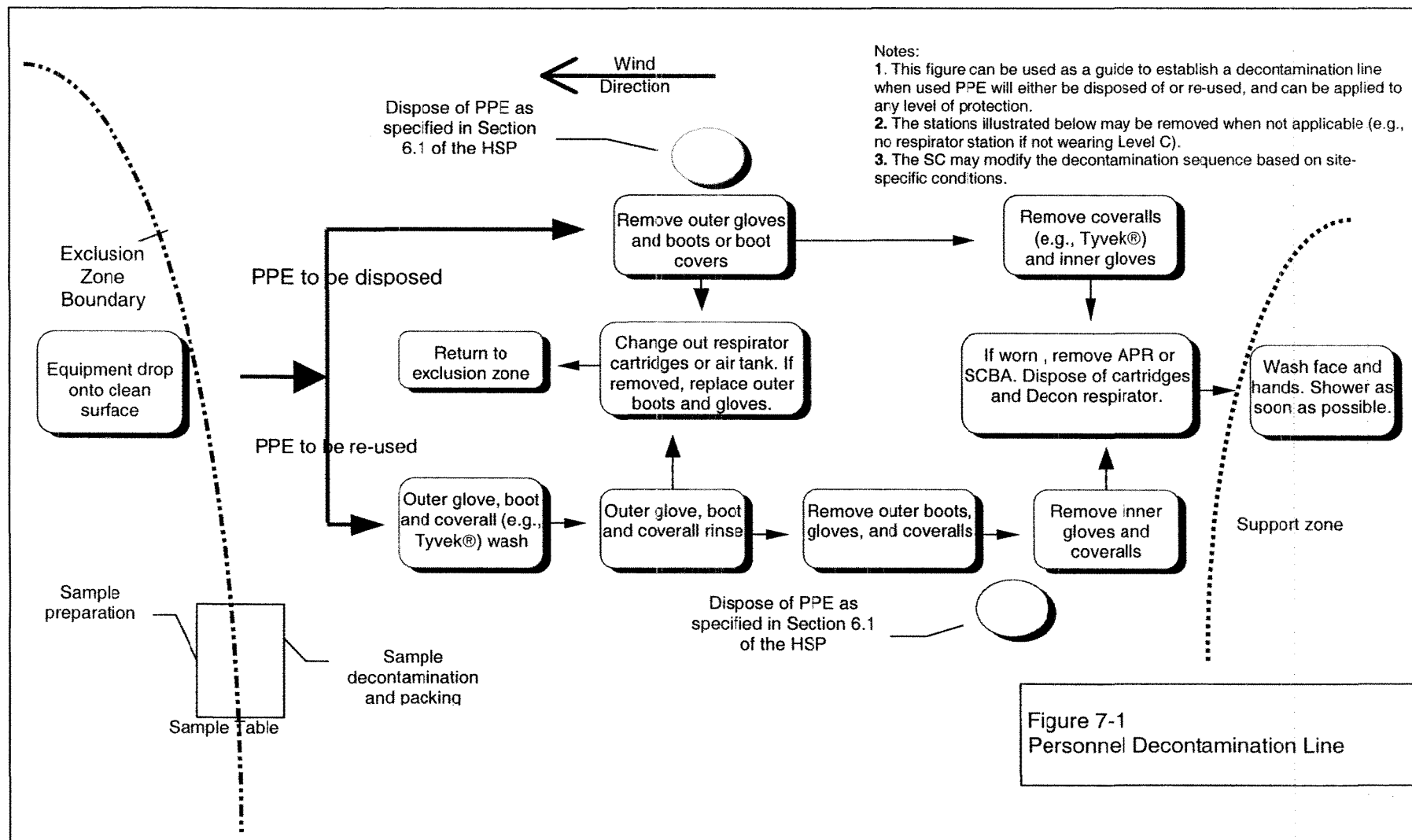
TABLE 7-1
Decontamination Specifications

Personnel	Sample Equipment	Heavy Equipment
Boot wash/rinse	Wash/rinse equipment	Power wash
Glove wash/rinse	Solvent-rinse equipment	Steam clean
Body-suit removal	Solvent-disposal method Dispose in drums	Water-disposal method Dispose in drums
Hand wash/rinse		
Face wash/rinse		
Shower ASAP		
PPE-disposal method Dispose in drums		
Water-disposal method Dispose in drums		

7.2 Diagram of Personnel-Decontamination Line

No eating, drinking, or smoking is permitted in contaminated areas and in exclusion or decontamination zones. The SHSS should establish areas for eating, drinking, and smoking. Contact lenses are not permitted in exclusion or decontamination zones.

Figure 7-1 illustrates a typical establishment of work zones, including the decontamination line. Work zones are to be modified by the SHSS to accommodate task-specific requirements.



8.0 Spill Prevention and Control Plan

This Spill Prevention and Control Plan establishes minimum site requirements. Subcontractors are responsible for spill prevention and control related to their operations. Subcontractors written spill prevention and control procedures must be consistent with this plan. Spills must be reported to your supervisor, the site manager, and the Contract Manager.

8.1 Spill Prevention

Fuel and chemical storage areas will be properly protected from onsite and offsite vehicle traffic. Fuel storage tanks must be equipped with secondary containment. Fuel tanks must be inspected daily for signs of leaks. Accumulated water must be inspected for signs of product before discharge.

Incidental chemical products must be properly stored, transferred, and used in a safe manner. Should chemical product use occur outside areas equipped with spill control materials, adequate spill control materials must be maintained.

8.2 Spill Containment and Control

Spill control materials will be maintained in the support zone and at fuel storage and dispensing locations. Incidental spills will be contained with sorbent and disposed of properly. Spilled materials must be immediately contained and controlled. Spill response procedures include:

- Immediately warn any nearby personnel and notify the work supervisor.
- Assess the spill area to ensure that it is safe to approach.
- Activate site evacuation signal if spill presents an emergency.
- Ensure any nearby ignition sources are immediately eliminated.
- If it can be done safely, stop the source of the spill.
- Establish site control for the spill area.
- Use proper PPE in responding to the spill.
- Contain and control spilled material through the use of sorbent booms, pads, or other materials.

8.3 Spill Cleanup and Removal

Spilled material, contaminated sorbent, and contaminated media will be cleaned up and removed as soon as possible. Contaminated spill material will be drummed, labeled, and properly stored until material is disposed of. Contaminated material will be disposed of according to applicable federal, state, and local requirements. Contact the regulatory compliance person for the project or the program for assistance.

9.0 Confined-Space Entry

Reference CH2M HILL SOP HS-17, Confined Space Entry

Confined-space entry requires health and safety procedures, training, and a permit.

When planned activities include confined-space entry, permit-required confined spaces accessible to CCI personnel are to be identified before the task begins. The SHSS will confirm that permit spaces are properly posted or that employees are informed of their locations and informed of their hazards. If excavation exceeds 4 feet, permit may be required.

When confined space entry is required, the SSHS will maintain a copy of SOP HS-17 onsite.

10.0 Site Control Plan

10.1 Site Control Procedures

The following site control procedures will be implemented for this CTO:

- SHSS will conduct a site safety briefing (see below) before starting field activities or as tasks and site conditions change.
- Topics for briefing on site safety: general discussion of health and safety plan, site-specific hazards, locations of work zones, PPE requirements, equipment, special procedures, emergencies.
- SHSS records attendance at safety briefings in logbook and documents topics discussed.
- Post the OSHA job-site poster in a central and conspicuous location at sites where project field offices, trailers, or equipment storage boxes are established.
- Determine wind direction.
- Establish work zones: support, decontamination, and exclusion zones. Delineate zones with flags or cones as appropriate. The support zone (SZ) should be upwind of the site.
- Establish decontamination procedures, including respirator-decontamination procedures, and test the procedures.
- Use access control at the entry and exit from each work zone.
- Store chemicals in appropriate containers.
- Make MSDSs available for onsite chemicals to which employees are exposed.
- Establish onsite communication consisting of the following:
 - Line-of-sight and hand signals
 - Air horn
 - Two-way radio or cellular telephone if available
- Establish offsite communication.
- Establish and maintain the "buddy system."
- Establish procedures for disposing of material generated on the site.
- SHSS is to conduct periodic inspections of work practices to determine the effectiveness of this plan -- refer to CH2M HILL SOP 18, *Health and Safety Checklist*. Deficiencies are to be noted, reported to the HSM, and corrected.

10.2 HAZWOPER Compliance Plan

Reference CH2M HILL SOP HS-17, Health and Safety Plans

The following procedures are to be followed when certain activities do not require 24- or 40-hour training. Note that prior approval from the HSM is required before these tasks are conducted on regulated hazardous waste sites.

- Certain parts of the site work may be covered by state or federal HAZWOPER standards and therefore require training and medical monitoring. Anticipated tasks must be included in Section 2.2.1.
- Air sampling must confirm that there is no exposure to gases or vapors before non-HAZWOPER-trained personnel are allowed on the site. Other data (e.g., soil) also must document that there is no potential for exposure. The HSM must approve the interpretation of these data. Refer to Sections 3.8 and 6.2 for contaminant data and air sampling requirements, respectively.
- Non-HAZWOPER-trained personnel must be informed of the nature of the existing contamination and its locations, the limits of their access, and the emergency action plan for the site. Non-HAZWOPER-trained personnel also must be trained in accordance with other state and federal OSHA requirements, including 29 CFR 1910.1200 (HAZCOM). Refer to Section 3.7.1 for hazard communication requirements.
- Air monitoring with direct-reading instruments conducted during regulated tasks also should be used to ensure that non-HAZWOPER-trained personnel (e.g., in an adjacent area) are not exposed to volatile contaminants. Non-HAZWOPER-trained personnel should be monitored whenever the belief is that there may be a possibility of exposure (e.g., change in site conditions), or at some reasonable frequency to confirm that there is no exposure. Refer to Section 6.1 for air monitoring requirements.
- Treatment system start-ups: Once a treatment system begins to pump and treat contaminated media, the site is, for the purposes of applying the HAZWOPER standard, considered a treatment, storage, and disposal facility (TSDF). Therefore, once the system begins operation, only HAZWOPER-trained personnel (minimum of 24 hours of training) will be permitted to enter the site. All non-HAZWOPER-trained personnel must leave the site.

If HAZWOPER-regulated tasks are conducted concurrently with nonregulated tasks, non-HAZWOPER-trained subcontractors must be removed from areas of exposure. If non-HAZWOPER-trained personnel remain on the site while a HAZWOPER-regulated task is conducted, the contaminant/exposure area (exclusion zone) must be posted, non-HAZWOPER-trained personnel must be reminded of the locations of restricted areas and the limits of their access, and real-time monitoring must be conducted. Non-HAZWOPER-trained personnel at risk of exposure must be removed from the site until it can be demonstrated that there is no longer a potential for exposure to health and safety hazards.

11.0 Emergency Response Plan

Reference CH2M HILL SOP HS-12, Emergency Response

11.1 Pre-Emergency Planning

SHSS performs the applicable pre-emergency planning tasks before starting field activities and coordinates emergency response with the facility and local emergency-service providers as appropriate.

- Review the facility emergency and contingency plans where applicable.
- Locate the nearest telephone; determine what onsite communication equipment is available (e.g., two-way radio, air horn).
- Identify and communicate chemical, safety, radiological, and biological hazards.
- Confirm and post emergency telephone numbers, evacuation routes, assembly areas, and route to hospital; communicate the information to onsite personnel.
- Post site map marked with locations of emergency equipment and supplies, and post OSHA job-site poster. The OSHA job-site poster is required at sites where project field offices, trailers, or equipment-storage boxes are established.
- Field Trailers: Post "Exit" signs above exit doors, and post "Fire Extinguisher" signs above locations of extinguishers. Keep areas near exits and extinguishers clear.
- Review changed site conditions, onsite operations, and personnel availability in relation to emergency response procedures.
- Evaluate capabilities of local response teams where applicable.
- Where appropriate and acceptable to the client, inform emergency room and ambulance and emergency response teams of anticipated types of site emergencies.
- Designate one vehicle as the emergency vehicle; place hospital directions and map inside; keep keys in ignition during field activities.
- Inventory and check site emergency equipment, supplies, and potable water.
- Communicate emergency procedures for personnel injury, exposures, fires, explosions, chemical and vapor releases.
- Review notification procedures for contacting CCI's medical consultant and team member's occupational physician.
- Rehearse the emergency response plan once before site activities begin, including driving the route to the hospital.
- Brief new workers on the emergency response plan.

- The SHSS will evaluate emergency response actions and initiate appropriate follow-up actions.

11.2 Emergency Equipment and Supplies

The SHSS should mark the locations of emergency equipment on the site map and should post the map. Emergency equipment and its location are listed in Table 11-1.

TABLE 11-1
Emergency Equipment

Emergency Equipment and Supplies	Location
20 lb (or two 10-lb) fire extinguisher (A, B, and C classes)	In Field Vehicle
First aid kit	In Field Vehicle
Eye wash	In Field Vehicle
Potable water	In Field Vehicle
Bloodborne-pathogen kit	In Field Vehicle
Additional equipment (specify)	

11.3 Emergency Medical Treatment

Emergency medical treatment procedures are as follows:

- Notify emergency response authorities listed in Sections 11.9 and 11.11 (e.g., 911).
- During a time of no emergency, contact CCI's medical consultant for advice and guidance on medical treatment.
- The SHSS will assume charge during a medical emergency until the ambulance arrives or until the injured person is admitted to the emergency room.
- Prevent further injury.
- Initiate first aid and CPR where feasible.
- Get medical attention immediately.
- Perform decontamination where feasible; lifesaving/first aid or medical treatment take priority.
- Notify the field team leader and the project manager of the injury.
- Make certain that the injured person is accompanied to the emergency room.
- Notify the Navy RAC Program manager and the Navy RAC health and safety manager. If neither can be contacted, call the SOUTHDIR Field Safety Manager. Contact numbers are listed in Table 11-4. Complete six question initial incident report and sent to PMO.
- Notify the injured person's human resources department within 24 hours.

- Prepare an incident report -- refer to CH2M HILL SOP 12, *Incident Report Form* on Virtual Office. Submit report to corporate director of health and safety, Navy RAC health and safety manager, and corporate human resources department within 24 hours.
- When contacting medical consultant, state that you are calling about a CCI matter, and give your name, telephone number, name of injured person, extent of injury / exposure, and the name and location of the medical facility where the injured person was taken.

11.4 Non-emergency Procedures

The procedures listed above may be applied to non-emergency incidents. Injuries and illnesses (including overexposure to contaminants) must be reported to Human Resources. If there is doubt about whether medical treatment is necessary, or if the injured person is reluctant to accept medical treatment, contact the CCI medical consultant.

When contacting the medical consultant, state that the situation is a CCI matter, and give your name, your telephone number, the name of the injured person, the extent of the injury or exposure, and the name and location of the medical facility where the injured person was taken. Follow these procedures as appropriate.

11.5 Incident Response

In fires, explosions, or chemical releases, actions to be taken include the following:

- Shut down CCI operations and evacuate the immediate work area.
- Account for personnel at the designated assembly area(s).
- Notify appropriate response personnel.
- Assess the need for site evacuation, and evacuate the site as warranted.

Instead of implementing a work-area evacuation, note that small fires or spills posing minimal safety or health hazards may be controlled.

11.6 Evacuation

Evacuation procedures are as follows:

- Evacuation routes will be designated by the SHSS before work begins.
- Onsite and offsite assembly points will be designated before work begins.
- Personnel will leave the exclusion zone and assemble at the onsite assembly point upon hearing the emergency signal for evacuation.
- Personnel will assemble at offsite point upon hearing emergency signal for a evacuation.
- SHSS and a "buddy" will remain on the site after the site has been evacuated (if possible) to assist local responders and advise them of the nature and location of the incident.
- SHSS accounts for all personnel in the onsite assembly zone.
- A person designated by the SHSS before work begins will account for personnel at the offsite assembly area.

- The SHSS will write up the incident as soon as possible after it occurs and will submit a report to the corporate director of health and safety.

11.7 Evacuation Routes and Assembly Points

Evacuation routes and assembly areas (and alternative routes and assembly areas) are specified on the site map posted at the site.

11.8 Evacuation Signals

Evacuation signals are listed in Table 11-2.

TABLE 11-2
Evacuation Signals

Signal	Meaning
Grasping throat with hand	Emergency—help me
Thumbs up	OK; understood
Grasping buddy's wrist	Leave area now
Continuous sounding of horn	Emergency; leave site now

11.9 Emergency Response Telephone Numbers

Emergency response telephone numbers are listed in Table 11-3.

TABLE 11-3
Emergency Response Telephone Numbers

Site Address:	Phone: Cellular Phone:
Police: Base Security	Phone: 270-5583
Fire: Mayport Fire Department	Phone: 911 or 5111 (Base phone)
Ambulance: Mayport Fire Department	Phone: 911 or 270-7200
Hospital: Baptist Medical Center-Beaches Address: 1350 13 Ave. South Jacksonville Beach, FL	Phone: 904/247-2900

*When using a cellular phone outside the telephone's normal calling area, exercise caution in relying on the cellular phone to activate 911. When the caller is outside the normal calling area, the cellular service carrier should connect the caller with emergency services in the area where the call originated, but this may not occur. Telephone numbers of backup emergency services should be provided if a cellular phone is relied on to activate 911.

- Leave Base and proceed SOUTH on Mayport Road 3.7 miles
- Mayport Road becomes SR A1A 0.5 Miles
- Turn LEFT at intersection of Atlantic Blvd (stay with SR-A1A) 0.1 miles
- Exit SR-10/ Atlantic Blvd Ramp 0.1 miles
- Merge onto Atlantic Blvd and proceed 1.1 miles
- Turn RIGHT on North 3rd Street and proceed 3.4 miles
- Turn RIGHT on South 13th Ave and proceed 0.6 miles
- Baptist Medical Center is on LEFT

Total Distance 9.5 miles

Travel time: ≈25 minutes

Route to Hospital:

The hospital location map is provided in Figure 11-1.

11.10 Government Agencies Involved in Project

Federal Agency and Contact Name: Naval Facilities Engineering Command

Contact the project manager. Generally, the project manager will contact relevant government agencies.

11.11 Emergency Contacts

If an incident occurs, notify the person's personnel office, the Navy RAC **Program Manager**, the Navy RAC **Health and Safety Manager**, and if neither is available contact the **Southern Division, NAVFAC Field Safety Office**, as soon as possible after obtaining medical attention for the injured person. Notification **MUST** be made within 24 hours of the incident. Notification is for injuries or property damage greater than \$1,000. Emergency contacts listed in Table 11-4.

TABLE 11-4
Emergency Contacts

CCI Medical Consultant Dr. Peter P Greany WorkCare Inc., 333 S. Anita Drive Orange, CA 92868, 800/455-6155 (After-hours calls will be returned within 20 minutes.)	Southern Division, NAVFAC Field Safety Contact: Mr. Fletcher Ballzigler; 843/820-5666 1 st Alternate: Mr. David Driggers; 843/820-7466 2 nd Alternate: Ms. Dolores Chester; 843/820-7462
CCI Drug-Free Workplace Program Administrator Alicia Sweeney/ORL, 407/423-0001	Site Safety and Health Specialist (SHSS) Jose Melendez, Phone 904/777-4812
Navy RAC Program Manager Scott Newman/ATL 770/604-9182, ext. 519; Cel-phone: 678/488-5988	Project Manager Mike Halil, Phone 904/777-4812
Navy RAC Health and Safety Manager (HSM) Robert Nash/ATL 770/604-9182, ext. 341	Navy RAC Environmental Compliance Manager Nancy Ballantyne/DEN 303/771-0900 ext. 5561
CCI Health and Safety Manager Angelo Liberatore 770/604-9182, ext. 592	Human Resources Manager Nancy Orr /DEN 303/771-0925
Client Eva Clements Naval Facilities Engineering Command	Corporate Human Resources Department Julie Zimmerman/COR 303/771-0900
Federal Express Dangerous Goods Shipping 800/238-5355 CH2M HILL Emergency Number for Shipping Dangerous Goods 800/255-3924	Worker's Compensation and Auto Claims Sterling Administrative Services 800/420-8926 After hours 800/497-4566 Report fatalities & report vehicular accidents involving pedestrians, motorcycles, or more than two cars.

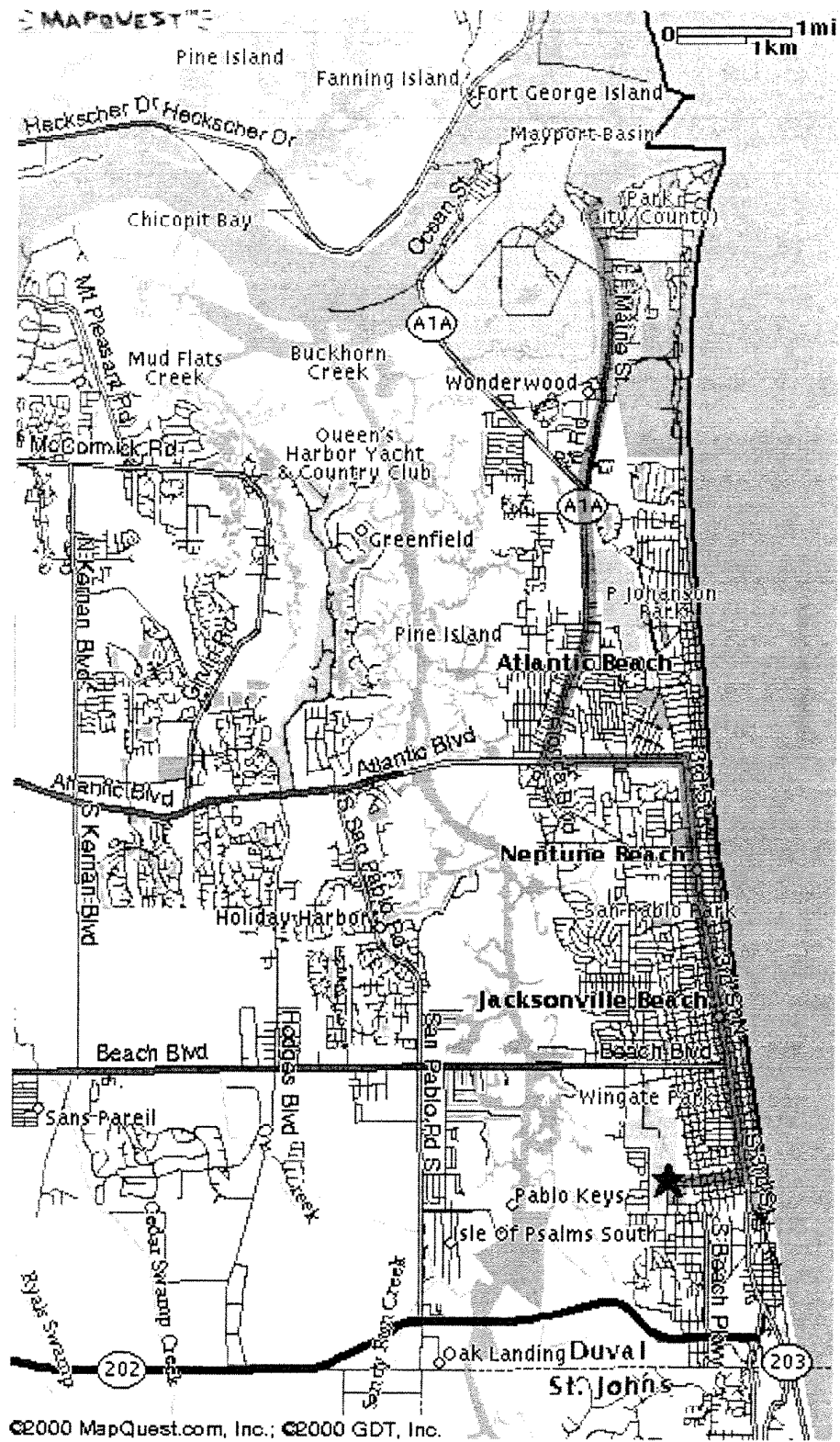


Figure 11-1
Hospital Location Map

12.0 Approval

This site-specific health and safety plan has been written for use by CCI only. CCI claims no responsibility for its use by others unless that use has been specified and defined in project or contract documents. The plan is written for the specific site conditions, purposes, dates, and personnel specified and must be amended if those conditions change.

12.1 Original Plan

Written by:

Date:

Approved by: Robert Nash

Date: May 2001

12.2 Revisions

Revisions Made by:

Date:

Revisions Approved by:




Date:

13.0 Distribution

Distribution for this plan is listed in Table 13-1.

TABLE 13-1
Distribution List

Name	Office	Responsibility	Number of Copies
Robert Nash	ATL	Health and Safety Manager/Approver	1
Mike Halil	JAX	Project Manager	1
	JAX	Site Superintendent/Field Team	
Jose Melendez	JAX	Site Safety and Health Specialist	1
Client	NA	Client Project Manager	




Attachment 1

Employee Signoff

Health and Safety Plan

Project Name: Mayport Excavation and Well Abandonment

[illegible]



Attachment 2

Project Specific Chemical Product Hazard Communication Form



Project-Specific Chemical Product Hazard Communication Form

This form must be completed prior to performing activities that expose personnel to hazardous chemicals products. Upon completion of this form, the SC will verify that training is provided on the hazards associated with these chemicals and the control measures to be used to prevent exposure to CH2M HILL and subcontractor personnel. Labeling and MSDS systems will also be explained.

Project Name: Mayport Excavation and Well
Abandonment




Project Number:

**MSDSs will be maintained
at the following
location(s):**

Hazardous Chemical Products Inventory

Chemical	Quantity	Location	MSDS Available	Container labels	
				Identity	Hazard
Methanol	< 1 Gallon	Support/Decon Zones			
Hexane	< 1 Gallon	Support/Decon Zones			
Alconox/Liquinox	< 1liter	Support/Decon Zones			

Refer to SOP HS-05 *Hazard Communication* for more detailed information.



Attachment 3

Chemical-Specific Training Form

CCI CHEMICAL-SPECIFIC TRAINING FORM

Location: Mayport Excavation and Well Abandonment

Project # :

SSHS:

Trainer:

TRAINING PARTICIPANTS:

NAME	SIGNATURE	NAME	SIGNATURE

REGULATED PRODUCTS/TASKS COVERED BY THIS TRAINING:

The HCC will use the product MSDS to provide the following information concerning each of the products listed above.

- ☐ Physical and health hazards
- ☐ Control measures that can be used to provide protection (including appropriate work practices, emergency procedures, and personal protective equipment to be used)
- ☐ Methods and observations used to detect the presence or release of the regulated product in the workplace (including periodic monitoring, continuous monitoring devices, visual appearance or odor of regulated product when being released, etc.)

Training participants will have the opportunity to ask questions concerning these products and, upon completion of this training, will understand the product hazards and appropriate control measures available for their protection.

Copies of MSDSs, chemical inventories, and CH2M HILL's written hazard communication program will be made available for employee review in the facility/project hazard communication file.

Attachment 4

Material Safety Data Sheets

Alconox®

MATERIAL SAFETY DATA SHEET

Alconox, Inc.
9 East 40th Street, Suite 200
New York, NY 10016

I. IDENTIFICATION

Product Name (as appears on label)	ALCONOX
CAS Registry Number:	Not Applicable
Effective Date:	January 1, 1998
Chemical Family:	Anionic Powdered Detergent

II. HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

There are no hazardous ingredients in ALCONOX as defined by the OSHA Standard and Hazardous Substance List 29 CFR 1910 Subpart Z.

III. PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point (F):	Not Applicable
Vapor Pressure (mm Hg):	Not Applicable
Vapor Density (AIR=1):	Not Applicable
Specific Gravity (Water=1):	Not Applicable
Melting Point:	Not Applicable
Evaporation Rate (Butyl Acetate=1):	Not Applicable
Solubility in Water:	Appreciable-Soluble to 10% at ambient conditions
Appearance:	White powder interspersed with cream colored flakes.

IV. FIRE AND EXPLOSION DATA

Flash Point (Method Used):	None
Flammable Limits:	LEL: No Data UEL: No Data
Extinguishing Media:	Water, dry chemical, CO ₂ , foam
Special Firefighting Procedures:	Self-contained positive pressure breathing apparatus and protective clothing should be worn when fighting fires involving chemicals.
Unusual Fire and Explosion Hazards:	None

V. REACTIVITY DATA

Stability:	Stable
Hazardous Polymerization:	Will not occur
Incompatibility (Materials to Avoid):	None

Hazardous Decomposition or Byproducts:	May release CO ₂ on burning
--	--

VI. HEALTH HAZARD DATA

Route(s) of Entry:	Inhalation? Yes Skin? No Ingestion? Yes
Health Hazards (Acute and Chronic):	Inhalation of powder may prove locally irritating to mucous membranes. Ingestion may cause discomfort and/or diarrhea. Eye contact may prove irritating.
Carcinogenicity:	NTP? No IARC Monographs? No OSHA Regulated? No
Signs and Symptoms of Exposure:	Exposure may irritate mucous membranes. May cause sneezing.
Medical Conditions Generally Aggravated by Exposure:	Not established. Unnecessary exposure to this product or any industrial chemical should be avoided. Respiratory conditions may be aggravated by powder.
Emergency and First Aid Procedures:	Eyes: Immediately flush eyes with water for at least 15 minutes. Call a physician. Skin: Flush with plenty of water. Ingestion: Drink large quantities of water or milk. Do not induce vomiting. If vomiting occurs readminister fluids. See a physician for discomfort.

VII. PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to be Taken if Material is Released or Spilled:	Material foams profusely. Recover as much as possible and flush remainder to sewer. Material is biodegradable.
Waste Disposal Method:	Small quantities may be disposed of in sewer. Large quantities should be disposed of in accordance with local ordinances for detergent products.
Precautions to be Taken in Storing and Handling:	Material should be stored in a dry area to prevent caking.
Other Precautions:	No special requirements other than the good industrial hygiene and safety practices employed with any industrial chemical.

VIII. CONTROL MEASURES

Respiratory Protection (Specify Type):	Dust mask - Recommended
Ventilation:	Local Exhaust-Normal Special-Not Required Mechanical-Not Required Other-Not Required
Protective Gloves:	Impervious gloves are useful but not required.
Eye Protection:	Goggles are recommended when handling solutions.
Other Protective Clothing or Equipment:	None
Work/Hygienic Practices:	No special practices required

THE INFORMATION HEREIN IS GIVEN IN GOOD FAITH BUT NO WARRANTY IS EXPRESSED OR IMPLIED.

ALDRICH CHEMICAL SUB OF SIGMA-ALDRICH -- 65550 METHANOL
MATERIAL SAFETY DATA SHEET
NSN: 681000F030311

Manufacturer's CAGE: 60928
Part No. Indicator: A
Part Number/Trade Name: 65550 METHANOL

=====
General Information
=====

Company's Name: ALDRICH CHEMICAL CO SUB OF SIGMA-ALDRICH
Company's Street: 1001 W ST PAUL AVE
Company's P. O. Box: 355
Company's City: MILWAUKEE
Company's State: WI
Company's Country: US
Company's Zip Code: 53233
Company's Emerg Ph #: 800-325-5832-S/800-231-8327-A
Company's Info Ph #: 800-325-5832-S/800-231-8327-A
Record No. For Safety Entry: 001
Tot Safety Entries This Stk#: 001
Status: SE
Date MSDS Prepared: 01APR92
Safety Data Review Date: 30SEP93
Preparer's Company: ALDRICH CHEMICAL CO SUB OF SIGMA-ALDRICH
Preparer's St Or P. O. Box: 1001 W ST PAUL AVE
Preparer's City: MILWAUKEE
Preparer's State: WI
Preparer's Zip Code: 53233
MSDS Serial Number: BRXZV

=====
Ingredients/Identity Information
=====

Proprietary: NO
Ingredient: METHANOL (METHYL ALCOHOL), COLUMBIAN SPIRITS
Ingredient Sequence Number: 01
NIOSH (RTECS) Number: PC1400000
CAS Number: 67-56-1
OSHA PEL: S,200PPM/250STEL
ACGIH TLV: S,200PPM/250STEL; 93
Other Recommended Limit: 200 PPM

=====
Physical/Chemical Characteristics
=====

Appearance And Odor: COLORLESS LIQUID
Boiling Point: 64.6C
Melting Point: -98C
Vapor Pressure (MM Hg/70 F): 97.68
Vapor Density (Air=1): 1.1
Specific Gravity: 0.791

=====
Fire and Explosion Hazard Data
=====

Flash Point: 52F
Lower Explosive Limit: 6%
Upper Explosive Limit: 36%
Extinguishing Media: CO2, DRY CHEMICAL POWDER OR APPROPRIATE FOAM.
Special Fire Fighting Proc: WEAR SELF-CONTAINED BREATHING APPARATUS & FULL

PROTECTIVE CLOTHING.

Unusual Fire And Expl Hazrds: VAPOR MAY TRAVEL CONSIDERABLE DISTANCE TO 725F.

=====
Reactivity Data
=====

Stability: YES

Cond To Avoid (Stability): HEAT, SPARKS, OPEN FLAME OR OTHER SOURCES OF IGNITION.

Materials To Avoid: ACIDS, ACID CHLORIDES, ACID ANHYDRIDES, OXIDIZING/REDUCING AGENTS, ALKALI METALS.

Hazardous Decomp Products: CO, CO2

Hazardous Poly Occur: NO
=====

Health Hazard Data
=====

LD50-LC50 Mixture: ORAL LD50 (RAT): 5628 MG/KG

Route Of Entry - Inhalation: YES

Route Of Entry - Skin: YES

Route Of Entry - Ingestion: YES

Health Haz Acute And Chronic: MAY BE FATAL IF SWALLOWED. HARMFUL IF INHALED OR ABSORBED THROUGH SKIN. VAPOR OR MIST IS IRRITATING TO THEY EYES, MUCOUS MEMBRANES, SKIN, & UPPER RESPIRATORY TRACT. CAN CAUSE DAMAGE TO THE EYES, LIVER, HEART, KIDNEYS. GASTROINTESTINAL DISTURBANCES & CONVULSIONS. MAY CAUSE BLINDNESS IF INGESTED.

Carcinogenicity - NTP: NO

Carcinogenicity - IARC: NO

Carcinogenicity - OSHA: NO

Explanation Carcinogenicity: NONE

Signs/Symptoms Of Overexp: OPTIC NERVE NEUROPATHY, VISUAL FIELD CHANGES, HEADACHE, DYSPNEA, NAUSEA, VOMITING.

Med Cond Aggravated By Exp: CUTS, SCRATCHES

Emergency/First Aid Proc: EYES/SKIN: FLUSH W/PLENTY OF WATER FOR AT LEAST 15 MINS WHILE REMOVING CONTAMINATED CLOTHING & SHOES. INHALATION: REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. IF BREATHIG IS DIFFICULT, GIVE OXYGEN. INGESTION: WASH OUT MOUTH W/WATER PROVIDED PERSON IS CONSCIOUS. DISCARD CONTAMINATED CLOTHING & SHOES. OBTAIN MEDICAL ATTENTION IN ALL CASES.
=====

Precautions for Safe Handling and Use
=====

Steps If Matl Released/Spill: EVACUATE AREA. SHUT OFF ALL IGNITION SOURCES. USE PROTECTIVE EQUIP. COVER W/DRY-LIME, SAND OR SODA ASH. PLACE IN COVERED CONTAIERS USING NON-SPARKING TOOLS & TRANSPORT OUTDOORS. VENTILATE AREA & WASH SPILL SITE AFTER MATERIAL PICKUP IS COMPLETE.

Neutralizing Agent: DRY LIME, SAND OR SODA ASH

Waste Disposal Method: BURN IN A CHEMICAL INCINERATOR EQUIPPED W/AN AFTERBURNER & SCRUBBER BUT EXERT EXTRA CARE IN IGNITING AS THIS MATERIAL IS HIGHLY FLAMMABLE. OBSERVE ALL FEDERAL, STATE & LOCAL LAWS. UN1230.

Precautions-Handling/Storing: KEEP TIGHTLY CLOSED & AWAY FROM HEAT, SPARKS & OPEN FLAME. PRODUCT IS HYGROSCOPIC. STORE IN A COOL DRY PLACE. NO SMOKING. CANNOT BE MADE NON-POISONOUS

Other Precautions: AVOID CONTACT W/EYES, SKIN, CLOTHING & BREATHING OF VAPORS. DON'T USE IF SKIN IS CUT OR SCRATCHED.
=====

Control Measures
=====

Respiratory Protection: WEAR AN APPROPRIATE NIOSH/MSHA APPROVED RESPIRATOR.

Ventilation: MECHANICAL EXHAUST

Protective Gloves: CHEMICAL RESISTANT

Eye Protection: SAFETY GOGGLES

Other Protective Equipment: RUBBER BOOTS, SAFETY SHOWER, EYE BATH

Work Hygienic Practices: WASH THOROUGHLY AFTER HANDLING.

=====

Transportation Data

=====

=====

Disposal Data

=====

=====

Label Data

=====

Label Required: YES

Technical Review Date: 30SEP93

Label Date: 17SEP93

Label Status: F

Common Name: 65550 METHANOL

Chronic Hazard: YES

Signal Word: DANGER!

Acute Health Hazard-Severe: X

Contact Hazard-Severe: X

Fire Hazard-Severe: X

Reactivity Hazard-Slight: X

Special Hazard Precautions: MAY BE FATAL IF SWALLOWED. HARMFUL IF INHALED OR ABSORBED THROUGH SKIN. VAPOR OR MIST IS IRRITATING TO THE EYES, MUCOUS MEMBRANES, SKIN, & UPPER RESPIRATORY TRACT. CAN CAUSE DAMAGE TO THE EYES, LIVER, HEART, KIDNEYS. GASTROINTESTINAL DISTURBANCES & CONVULSIONS. MAY CAUSE BLINDNESS IF INGESTED. TARGET ORGANS: EYES, SKIN, LIVER, HEART, KIDNEYS, RESPIRATORY & DIGESTIVE TRACTS. DIGESTIVE TRACTS, LIVER.

Protect Eye: Y

Protect Skin: Y

Protect Respiratory: Y

Label Name: ALDRICH CHEMICAL CO SUB OF SIGMA-ALDRICH

Label Street: 1001 W ST PAUL AVE

Label P.O. Box: 355

Label City: MILWAUKEE

Label State: WI

Label Zip Code: 53233

Label Country: US

Label Emergency Number: 800-325-5832-S/800-231-8327-A

Year Procured: UNK

ALDRICH CHEMICAL -- HEXANE ACS GRADE - N-HEXANE
MATERIAL SAFETY DATA SHEET
NSN: 681000N040300
Manufacturer's CAGE: 60928
Part No. Indicator: A
Part Number/Trade Name: HEXANE ACS GRADE

=====

General Information

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Item Name: N-HEXANE
Company's Name: ALDRICH CHEMICAL CO
Company's P. O. Box: 355
Company's City: MILWAUKEE
Company's State: WI
Company's Country: US
Company's Zip Code: 53201
Company's Emerg Ph #: 414-273-3850
Company's Info Ph #: 414-273-3850
Record No. For Safety Entry: 001
Tot Safety Entries This Stk#: 001
Status: SMJ
Date MSDS Prepared: 04AUG92
Safety Data Review Date: 03MAR93
MSDS Serial Number: BRZJT
Hazard Characteristic Code: NK

=====

Ingredients/Identity Information

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Proprietary: NO
Ingredient: HEXANE
Ingredient Sequence Number: 01
NIOSH (RTECS) Number: MN9275000
CAS Number: 110-54-3
OSHA PEL: 500 PPM
ACGIH TLV: 50 PPM; 9293

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Physical/Chemical Characteristics

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Appearance And Odor: COLORLESS LIQUID
Boiling Point: 154F, 68C
Vapor Pressure (MM Hg/70 F): 132@20C
Vapor Density (Air=1): 3
Specific Gravity: 0.661

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Fire and Explosion Hazard Data

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Flash Point: -10F, -23C
Lower Explosive Limit: 1.2%
Upper Explosive Limit: 7.7%
Extinguishing Media: CARBON DIOXIDE, DRY CHEMICAL POWDER OR APPROPRIATE FOAM.
Special Fire Fighting Proc: WEAR NIOSH/MSHA APPROVED SCBA AND FULL PROTECTIVE EQUIPMENT (FP N). USE WATER SPRAY TO COOL FIRE-EXPOSED CONTAINERS.
Unusual Fire And Expl Hazrds: VAPOR MAY TRAVEL CONSIDERABLE DISTANCE TO SOURCE OF IGNITION AND FLASH BACK. CONTAINER EXPLOSION MAY OCCUR UNDER FIRE CONDITIONS. EXTREMELY FLAMMABLE.

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Reactivity Data

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Stability: YES
Cond To Avoid (Stability): HEAT, SPARKS AND OPEN FLAME.
Materials To Avoid: OXIDIZING AGENTS. CHLORINE, FLUORINE, MAGNESIUM
PERCHLORATGE.
Hazardous Decomp Products: TOXIC FUMES OF: CARBON MONOXIDE, CARBON
DIOXIDE.
Hazardous Poly Occur: NO
Conditions To Avoid (Poly): NOT RELEVANT

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Health Hazard Data

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LD50-LC50 Mixture: LD50:(ORAL,RAT)28710 MG/KG
Route Of Entry - Inhalation: YES
Route Of Entry - Skin: YES
Route Of Entry - Ingestion: YES
Health Haz Acute And Chronic: ACUTE: HARMFUL IF SWALLOWED, INHALED, OR
ABSORBED THRU SKIN. VAPOR OR MIST IS IRRITATING TO EYES, MUCOUS MEMBRANES
AND UPPER RESPIRATORY TRACT. CAUSES SKIN IRRITATION. MAY CAUSE NERVOUS
SYSTEM DISTURBANCES. EXPOSURE CAN CAUSE: COUGHING, CHEST PAINS, DIFFICULTY
IN BREATHING. LUNG IRRIT, CHEST PAIN (EFTS OF OVEREXP)
Carcinogenicity - NTP: NO
Carcinogenicity - IARC: NO
Carcinogenicity - OSHA: NO
Explanation Carcinogenicity: NOT RELEVANT
Signs/Symptoms Of Overexp: HLTH HAZ: & EDEMA WHICH MAY BE FATAL. GI
DISTURBANCES, NAUSEA, HEADACHE AND VOMITING.
Med Cond Aggravated By Exp: NONE SPECIFIED BY MANUFACTURER.
Emergency/First Aid Proc: EYES: IMMED FLUSH W/COPIOUS AMTS OF WATER FOR @
LST 15 MIN & SEEK MED ADVICE. SKIN: IMMED FLUSH W/COPIOUS AMTS OF WATER FOR
@ LST 15 MIN WHILE REMOVING CONTAMD CLTHG & SHOES. WASH CONTAMD CLTHG
BEFORE REUSE. INHAL: REMOVE TO FRESH AIR. IF NOT BRTHG GIVE ARTF RESP. IF
BREATHING IS DIFFICULT, GIVE OXYGEN. INGEST: WASH OUT MOUTH W/ WATER
PROVIDED PERSON IS CONSCIOUS. CALL A PHYSICIAN.

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Precautions for Safe Handling and Use

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Steps If Matl Released/Spill: EVAC AREA. SHUT OFF ALL SOURCES OF IGNIT.
WEAR NIOSH/MSHA APPRVD SCBA, RUBB BOOTS & HEAVY RUBB GLOVES. COVER W/AN
ACTIVATED CARBON ABSORB, TAKE UP & PLACE IN CLSD CONTRS. TRANSPORT
OUTDOORS. VENT AREA & WASH SPILL SITE AFTER MATL PICKUP IS COMPLETE.
Neutralizing Agent: NONE SPECIFIED BY MANUFACTURER.
Waste Disposal Method: BURN IN A CHEMICAL INCINERATOR EQUIPPED WITH AN
AFTERBURNER AND SCRUBBER BUT EXERT EXTRA CARE IN IGNITING AS THIS MATERIAL
IS HIGHLY FLAMMABLE. OBSERVE ALL FEDERAL, STATE AND LOCAL ENVIRONMENTAL
REGULATIONS.
Precautions-Handling/Storing: KEEP TIGHTLY CLSD. STORE IN A COOL DRY
PLACE. DO NOT BREATHE VAP. AVOID CONT W/EYES/SKIN/CLTHG. IRRITANT. HARMFUL
VAP. NEUROLOGICAL HAZARD.
Other Precautions: KEEP AWAY FROM HEAT, SPARKS, AND OPEN FLAME.

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Control Measures

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Respiratory Protection: WEAR APPROPRIATE NIOSH/MSHA APPROVED RESPIRATOR.
Ventilation: USE ONLY IN A CHEMICAL FUME HOOD.

Protective Gloves: CHEMICAL-RESISTANT GLOVES.

Eye Protection: CHEMICAL SAFETY GOGGLES.

Other Protective Equipment: OTHER PROTECTIVE CLOTHING, SAFETY SHOWER AND EYE BATH.

Work Hygienic Practices: WASH THOROUGHLY AFTER HANDLING.

Suppl. Safety & Health Data: NONE SPECIFIED BY MANUFACTURER.

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Transportation Data
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=====
Disposal Data
=====

=====
Label Data
=====

Label Required: YES

Technical Review Date: 03MAR93

Label Date: 03MAR93

Label Status: G

Common Name: HEXANE ACS GRADE

Chronic Hazard: NO

Signal Word: DANGER!

Acute Health Hazard-Severe: X

Contact Hazard-Slight: X

Fire Hazard-Severe: X

Reactivity Hazard-None: X

Special Hazard Precautions: STORE IN A COOL DRY PLACE. DO NOT BREATHE VAPOR. AVOID CONTACT W/EYES/SKIN/CLTHG. IRRITANT. HARMFUL VAPOR.

HARMFUL IF SWALLOWED, INHALED, OR ABSORBED THRU SKIN. VAPOR/MIST IS IRRITATING TO EYES, MUCOUS MEMBRANES AND UPPER RESPIRATORY TRACT. CAUSES COUGHING, CHEST PAINS, DIFFICULTY IN BREATHING, LUNG IRRITATION, CHEST PAIN & EDEMA WHICH MAY BE FATAL. GI DISTURBANCES, NAUSEA, HEADACHE AND VOMITING. CHRONIC: NONE LISTED BY MANUFACTURER.

Protect Eye: Y

Protect Skin: Y

Protect Respiratory: Y

Label Name: ALDRICH CHEMICAL CO

Label P.O. Box: 355


Label City: MILWAUKEE

Label State: WI

Label Zip Code: 53201



Label Country: US

Label Emergency Number: 414-273-3850



Attachment 5

Self Assessment Checklist





JOBSITE SAFETY INSPECTION CHECKLIST

Revision.: 02

STANDARD OF PRACTICE HS-18 - HEALTH AND SAFETY CHECKLIST

Date: 05/01/00

Note: The following jobsite safety inspection checklist is to be used only at locations where CCI controls the work. It is not to be used at locations where others control the work.

Project Name: Mayport Excavation and Well Abandonment

Project No.: _____

Location: Naval Station Mayport

Project Manager: Mike Halil

Inspector: _____

Date: _____

If an item is not applicable, the column titled "N/A" should be checked. If an item is applicable but the auditor does not observe it during the inspection, the "N/O" column should be checked. For each deficiency noted, a Health and Safety Audit Finding Form must be completed. The NAVY RAC Health and Safety Manager must be copied on the results of all audits.

Check "Yes" for Items Completed

Yes No N/A N/O

I. JOBSITE OFFICE

1. Posters and safety signs in place:

a. OSHA safety poster

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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b. Emergency Telephone Number Form

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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c. Workers Compensation Form

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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2. First aid kit:

a. Fully stocked/sufficient supply

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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b. First-aid administered by a person with a valid certificate

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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3. Bloodborne-pathogen kit

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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4. Accident/injury reporting:

a. Employees briefed

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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b. Forms available

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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c. Injuries and illnesses reported and logged

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

d. Accidents investigated and properly followed up to prevent

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

e. Accident reports and logs submitted promptly as required

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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5. Job safety rules and regulations available/posted

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

II. HAZARD COMMUNICATION

1. Employee training:

a. Employees' signed training certificates on file

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

- | | | | | |
|---|--------------------------|--------------------------|--------------------------|--------------------------|
| 2. Material safety data sheets (MSDSs): | | | | |
| a. MSDSs on file | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Log assigned to competent person | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Log complete and up to date | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Written program on file | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

III. EMPLOYEE TRAINING

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
| 1. Site personnel have read the job safety rules and regulations and have signed the "Employee Signoff Sheet" | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Sufficient instruction given in recognition and avoidance of job hazards; unsafe conditions; and job rules, regulations, and procedures | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Sufficient instruction in proper use and maintenance of tools, equipment, and personal protective equipment | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Employees instructed to report unsafe or hazardous conditions to proper job supervisor | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Employees instructed to promptly report injury, illness, and accidents involving damage to equipment and materials | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Safety indoctrination held for new employees | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

IV. JOBSITE LOGISTICS AND LAYOUT

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
| 1. Traffic routes around construction areas: | | | | |
| a. Warning signs, flagging in place | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Trucks and heavy equipment: | | | | |
| a. Good mechanical conditions | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Backup signals working | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Seat belts installed and used | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

V. PUBLIC PROTECTION

- | | | | | |
|---------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 1. Warning signs in place around site | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. After-hours hazards: | | | | |
| a. Open ditches protected | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Hazard lights | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

VI. HOUSEKEEPING

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
| 1. Material storage yard: | | | | |
| a. Stacked neatly and properly | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Aisles, walkways, roads clear | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Check work areas for: | | | | |
| a. Loose and waste materials | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Empty bottles, containers, papers, trash, bands, brick-bats, etc. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Trash cans, dumpsters available and emptied regularly | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

d. Trash receptacles provided for drinking cups

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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VII. PERSONAL PROTECTIVE EQUIPMENT (PPE)

1. Hard hats

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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2. Safety shoes/boots

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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3. Eye/face protection

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

4. Safety belts/lanyards

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

5. Ear protection:

a. Noise level areas of 90 dBA and above identified

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

b. Signs notifying personnel of "Hearing Protection Required" posted

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

6. Specialized equipment:

a. Gloves

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

7. Tools:

a. Handles in good shape

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

b. Tool guards in place

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

VIII. SANITATION

1. Temporary toilets:

a. Serviced regularly

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

b. Sufficient Quantity (20 or fewer employees - 1 required;
20 or more employees - 1 toilet and 1 urinal per 40 workers)

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

2. Potable Water:

a. Tightly closed containers

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

b. Equipped with tap

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

c. Paper cups available

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

d. Containers labeled "Drinking Water"

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

IX. FLOOR AND WALL OPENINGS GUARDS

XI. SCAFFOLDING

XII. ELECTRICAL

1. Cords/devices have current inspection color code tape installed

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

2. Frayed cords, broken plugs fixed

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

3. Temporary wiring:

a. Panels secured and GFCIs working

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

b. Away from vehicle pathways

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

c. Out of water/moisture

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------

d. No broken receptacles found	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Sufficient outlets for all crafts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Temporary lighting with cages	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Assured equipment grounding conductor program in place, if not using GFCIs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Lock-out or tag-out system used when necessary	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Electrical dangers posted and guarded	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Fire hazards checked, proper extinguishers available	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Only qualified electricians work on electrical circuits and equipment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Cords passing through work areas must be covered or elevated to protect them from damage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Extension cords must be hard or extra-hard usage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
XIII. TEMPORARY HEATERS				
XIV. FIRE PROTECTION				
1. One extinguisher, 2A rating, for each 3,000 square feet of protected area	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Trash, paper, other combustibles picked up	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Welders/roofers have extinguishers nearby and a fire watch is available if needed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Supervisors and employees trained in proper use of extinguishers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
XV. MATERIAL STORAGE AND HANDLING				
1. Neat storage area, clear passageways	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Materials spotted to minimize rehandling and reduce transport distances	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Power equipment used to handle heavy/awkward loads	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Stacks on firm footing and all tier stacked materials secured against sudden movement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
XVI. DEMOLITION WORK				
1. Operations planned ahead and checked for lead and asbestos if applicable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Safety work permit required and necessary blinding of lines, etc., accomplished	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Adjacent structures shored or braced	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Electrical, water, sewer, steam lines cut off, locked out, or tagged	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- | | | | | |
|---|--------------------------|--------------------------|--------------------------|--------------------------|
| 5. Area roped off or barricaded | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Proper safety, danger, and warning signs provided and used | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Adequate lighting and ventilation provided where necessary | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Full clothing, serviceable shoes, and adequate PPE
(hard hats, goggles, gloves, safety belts, respirators, ear plugs or muffs, etc.) provided | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. Safe housekeeping, welding, rigging, and scaffolding practices observed | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 10. Regular supervision maintained | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

XVII. STEEL ERECTION

XX. FLAMMABLE AND COMBUSTIBLE LIQUIDS

- | | | | | |
|---|--------------------------|--------------------------|--------------------------|--------------------------|
| 1. Containers clearly marked to show contents (gas cylinders, cans, etc.) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Proper storage practices observed: | | | | |
| a. Storage areas enclosed or protected from heat and mobile equipment exposure | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Fire hazards checked | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Sufficient fire extinguishers | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. UL approved safety cans for 1 to 5 gallons of flammable liquids | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Approved cabinet for indoor storage of liquids in excess of 25-gallons, but not more than 120-gallon storage | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| f. Sign labeled "Flammable - Keep Fire Away" posted on cabinet | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

XXI. FLAMMABLE GAS (Oxygen/Acetylene)

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
| 1. Cylinders: | | | | |
| a. Away from heat | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Stored upright (secured) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Valves closed on empty cylinders | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Valve protection caps in place if cylinder not in use | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Valve key wrench available | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| f. Portable rack with bottles secured | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| g. Instruct project staff to never drag or slide bottles | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| h. Designated storage area | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| i. Oxygen bottles stored 20' from acetylene bottles or 1/2-hour fire | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

barrier installed between them				
j. "No Smoking" signs posted	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Gauges/valves/hoses:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
a. Good condition	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Fire arresters installed (both hoses)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Eye protection available	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. All burning torches bled and free of oxygen and acetylene and/or other gases during lunch breaks and other extended periods of time	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. When in use, gas lines properly located to prevent tripping and falling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Ventilation adequate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
XXII. WELDING OPERATIONS				
1. Performed by qualified personnel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Screens, shields, or eye protection provided and used to protect employees from welding operation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Employees wear sufficient clothing and PPE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Equipment checked before use and in operative conditions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Electrical equipment grounded	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Power cables protected and in good repair	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Power cables properly located to prevent tripping and falling hazards	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Dry chemical fire extinguisher within 30 feet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Exposed combustible materials removed to safe location or properly protected from sparks and slag	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Valid hot work permit required or provided	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Machines turned off at end of shift or when not in use for extended periods	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. "Danger - No Smoking, Matches or Open Lights" signs posted when required	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Overhead protection provided where required	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
XXIII. HOISTS				
XXIV. BLASTING				

XXV. HAZARDOUS WASTE**Certification and Training of CH2M HILL Personnel**

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
| 1. Medical exam within last 12 months | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. 40-hour initial training, 3 days supervised field activities, 8-hour annual refresher | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. First aid and CPR certification | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Attend pre-entry safety meeting | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Safety Coordinator with appropriate training | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Certification and Training of Subcontractor Personnel

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
| 1. Medical exam within last 12 months | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. 40-hour initial training, 3 days supervised field activities, 8-hour annual refresher | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. First aid and CPR certification | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Attend pre-entry safety meeting | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Site Safety Documentation

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
| 1. Site health and safety plan (HSP) prepared and approved | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. HSP onsite | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. All personnel onsite identified in HSP | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Documentation of safety briefing | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Hospital map posted | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Phone numbers posted | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Emergency vehicle identified | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Material Safety Data Sheets (MSDSs) onsite | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. Work zones delineated
(How? _____) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 10. Wind direction flags in use | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 12. Buddy system in use | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 13. Decontamination procedures established as specified in HSP | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 14. No eating, drinking, or smoking in exclusion and contamination Reduction zones | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 15. Toilet facilities provided | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

16. No contact lenses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Work conducted during daylight hours only	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>Safety Briefing</u>				
1. All personnel attended (including new personnel)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Documentation of meetings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Chemical hazards and toxicology reviewed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Physical hazards reviewed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Biological hazards reviewed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Heat/cold stress information reviewed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Air monitoring requirements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Levels of protection reviewed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Work zones reviewed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Decontamination procedures reviewed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Emergency response procedures reviewed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Site communications	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>Personal Protective Equipment (PPE)</u>				
1. Levels of protection being worn as specified in HSP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. All appropriate PPE available onsite	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Hard hats being worn	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Appropriate hand protection being used (What? _____)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Appropriate body protection being used (What? _____)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Appropriate eye protection being used (What? _____)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Appropriate ear protection being used	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. If PPE is not onsite, prepared to halt work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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|--|--------------------------|--------------------------|--------------------------|--------------------------|
| 9. Disposal methods in place for disposable PPE | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <u>Decontamination Procedures</u> | | | | |
| 1. Decontamination procedure established as specified in the HSP | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Decontamination zone clearly defined | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. PPE properly decontaminated
(How? _____) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Sampling equipment properly decontaminated
(How? _____) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Monitoring equipment properly decontaminated
(How? _____) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Heavy equipment properly decontaminated
(How? _____) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Samples properly decontaminated
(How? _____) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Decontamination fluids appropriately disposed of | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

XXVI. CONSTRUCTION INSPECTIONS

XXVII. OFFICE TRAILERS/BUILDINGS

XXIII. CONFINED SPACE ENTRY

XXIX. STAIRWAYS AND LADDERS

XXX. FALL PROTECTION

XXXI. EXCAVATIONS

Personnel Safe Work Practices (3.1)

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|---|--------------------------|--------------------------|--------------------------|--------------------------|
| 1. Competent person has completed daily inspection and has authorized any entry. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Personnel aware of entry requirements established by competent person. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Protective systems are free from damage and in stable condition. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Surface objects/structures secured from falling into excavation. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Potential hazardous atmospheres have been tested and found to be at safe levels. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Precautions taken to prevent cave-in from water accumulation in the excavation. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Personnel wearing appropriated PPE, HSP. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <u>General</u> | | | | |
| 8. Daily safety briefing/meeting conducted with personnel. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. Excavation and protective systems adequately inspected by competent person. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

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|--|--------------------------|--------------------------|--------------------------|--------------------------|
| 10. Defective protective systems or other unsafe conditions corrected before entry. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 11. Guardrails provided on walkways over excavations 6' or deeper . | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 12. Barriers provided at excavations 6' or deeper when not readily visible. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 13. Barriers or covers provided for wells, pits, shafts, or similar excavation 6' or deeper. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 14. Excavating equipment operated safely. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <u>Prior to Excavating (3.2.2)</u> | | | | |
| 15. Location of underground utilities and installations identified. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <u>Excavating Activities (3.2.3)</u> | | | | |
| 16. Rocks, trees, and other unstable surface objects removed or supported. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 17. Exposed underground utility lines supported. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 18. Undermined surface structures supported or determined to be in safe condition. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 19. Warning system used to remind equipment operators of excavation edge. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <u>Excavation Entry (3.2.4)</u> | | | | |
| 20. Trenches >4' deep provided with safe means of egress within 25'. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 21. Structure ramps designed and approved by competent person. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 22. Potential hazardous atmospheres tested prior to entry. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 23. Rescue equipment provided where potential for hazardous atmosphere exist. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 24. Ventilation used to control hazardous atmospheres and air tested frequently. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 25. Appropriate respiratory protection used when ventilation does not control hazards. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 26. Precautions taken to prevent cave-in from water accumulation in the excavation. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 27. Precautions taken to prevent surface water from entering excavation. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 28. Spoil piles, equipment, materials restrained or kept at least 2' from excavation edge. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 29. Protection provided from falling/rolling material from excavation face. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <u>Excavating at Hazardous Waste Sites (3.2.7)</u> | | | | |
| 30. Waste disposal according to HSP and Environmental Protection Plan. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 31. Appropriate decontamination procedures being followed, per HSP. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

XXXII. DRILLING

XXXIII. EARTHMOVING EQUIPMENT

Personnel Safe Work Practices (3.1)

- | | | | | |
|---|--------------------------|--------------------------|--------------------------|--------------------------|
| 1. Only authorized personnel operating earthmoving equipment. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|---|--------------------------|--------------------------|--------------------------|--------------------------|

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|--|---|--------------------------|--------------------------|--------------------------|--------------------------|
| 2. | Personnel maintaining safe distance from operating equipment. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. | Personnel and equipment operator in close communication when personnel must be in proximity of earthmoving equipment. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. | Personnel approach operating equipment safely. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. | Personnel wearing high-visibility and/or reflective vests when close to operating equipment. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. | Personnel riding only in seats of equipment cab and using seat belts. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. | Personnel not positioned under hoisted loads. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. | Personnel not hoisted by equipment. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. | Personnel instructed not to approach equipment that has become electrically energized. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 10. | Personnel wearing appropriate PPE, per HSP. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <u>General (3.2.1)</u> | | | | | |
| 11. | Daily safety briefing/meeting conducted with crew. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 12. | Daily inspection of equipment and equipment accessories conducted before use. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 13. | At least one fire extinguisher available at the equipment operating area. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <u>Earthmoving Equipment Components (3.2.2)</u> | | | | | |
| 14. | Backup alarm or spotter used when backing equipment. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 15. | Operational horn provided on bi-directional equipment. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 16. | Seat belts are provided and used. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 17. | Rollover protective structures (ROPS) provided. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 18. | Braking system capable of stopping full payload. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 19. | Headlights and taillights operable when additional lights required. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 20. | Brake lights in operable condition. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 21. | Cab glass provides no visible distortion to operator. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 22. | Dump truck operating levers provided with latch to prevent accidental dumping. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 23. | Dump truck beds provided with positive means of support during <u>maintenance or inspection.</u> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 24. | Hauling equipment (dump trucks) provided with cab shield or canopy. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <u>Earthmoving Equipment Placement (3.2.3)</u> | | | | | |
| 25. | Location of underground utilities identified. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

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|---|--------------------------|--------------------------|--------------------------|--------------------------|
| 26. Safe clearance distance maintained while working under overhead lines. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 27. Safe distance is maintained while traveling under powerlines. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 28. Parking brake set when equipment parked and equipment chocked when parked on incline. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 29. Unattended equipment visibly marked at night. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <u>Earthmoving Equipment Operation (3.2.4)</u> | | | | |
| 30. Equipment operated on safe roadways and grades. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 31. Equipment operated at safe speed. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 32. Equipment not operated during inclement weather, lightning storms. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 33. Using equipment to lift loads, other than earth, done according to equipment manufacturer specifications. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 34. Lifting and hauling capacities are not exceeded. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 35. Equipment components lowered when not in use. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 36. All machine guards are in place. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 37. Air monitoring conducted per HSP for hazardous atmospheres. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <u>Earthmoving Equipment Maintenance (3.2.5)</u> | | | | |
| 38. Defective components repaired immediately. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 39. Suspended equipment or equipment parts are supported prior to work under or between. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 40. Lockout/tagout procedures used prior to maintenance. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 41. Tires on split rims removed using tire safety rack or cage. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 42. Good housekeeping maintained on and around equipment. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <u>Excavating at Hazardous Waste Sites (3.2.6)</u> | | | | |
| 43. Waste disposal according to waste plan and HSP | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 44. Appropriate decontamination procedures followed, per HSP. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

XXXIV. DEMOLITION

PERSONNEL SAFE WORK PRACTICES (3.1)

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
| 1. Personnel remain safe distance from demolition zone (DZ) during work. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Personnel entering DZ, only when necessary. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Prior to DZ entry, competent person evaluates structure and authorizes Entry. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

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|--|--------------------------|--------------------------|--------------------------|--------------------------|
| 4. Personnel aware of entry requirements established by competent person. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Competent person escorts personnel during DZ entry, if possible. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Personnel removed from DZ prior to activities that could affect structural integrity or safety. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Personnel not positioned under hoisted loads. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Personnel wearing appropriated PPE per HSP. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

PERSONNEL ACTIVITIES (3.2)

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
| 9. Demolition permit completed and submitted, as required. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 10. Competent person completed engineering survey, available at site. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 11. Regulated hazardous substances removed prior to demolition. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 12. Hazardous materials purged from tanks, pipes, and equipment. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 13. Utility service lines shut off, capped, or otherwise controlled, utilities notified. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 14. Utilities needed for demolition temporary relocated. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

GENERAL (3.2.1)

- | | | | | |
|---|--------------------------|--------------------------|--------------------------|--------------------------|
| 15. Daily safety briefing/meeting conducted with crew. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 16. Daily inspection of demolition equipment conducted before use. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 17. Competent person inspecting DZ for hazards as work progresses. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 18. Competent person controls entry into DZ, unauthorized entry prohibited. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 19. Multi-story structures provided with adequate canopy over entrances. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 20. Demolition starts at top of structure and proceeds downward. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 21. Fire extinguisher available at demolition area. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

PROTECTION OF THE PUBLIC (3.2.2)

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
| 22. Demo work not performed in area occupied by public, unless permitted By contract. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 23. Overhead protection provided for pedestrian traveled sidewalks. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 24. Walking surfaces kept free of obstructions. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 25. Standard guardrails provided on pedestrian bridges, ramps, runways, and platforms. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 26. Signs posted informing pedestrians of hazards. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 27. Temporary fence provided around perimeter of DZ adjacent to public | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

areas.

28. Watch placed at openings when DZ barricades temporarily removed. ☐ ☐ ☐ ☐
29. Warning lights provided around DZ hazards at night, walkways lighted. ☐ ☐ ☐ ☐

XXXVI. HAND AND POWER TOOLS

SAFE WORK PRACTICES (3.1)


1. All tools operated according to manufacture's instructions. ☐ ☐ ☐ ☐
2. All hand and power tools maintained in a safe condition and inspected before each use. ☐ ☐ ☐ ☐
3. Defective tools are tagged and removed from service until repaired. ☐ ☐ ☐ ☐
4. PPE is selected and used according to tool-specific hazards. ☐ ☐ ☐ ☐
5. Power tools are not carried or lowered by cord or hose. ☐ ☐ ☐ ☐
6. Tools are disconnected from energy sources when not in use. ☐ ☐ ☐ ☐
7. Safety guards remain installed or are promptly replaced after repair. ☐ ☐ ☐ ☐
8. Tools are stored properly. ☐ ☐ ☐ ☐
9. Cordless tools and recharging units conform to electrical standards. ☐ ☐ ☐ ☐
10. Tools used in explosive environments are rated for such use. ☐ ☐ ☐ ☐
11. Consider controls to avoid muscular skeletal, repetitive motion, and cumulative trauma stresses. ☐ ☐ ☐ ☐
12. Knife or blade hand tools are used with the proper precautions. ☐ ☐ ☐ ☐

General (3.2.1)

13. PPE is selected and used according to tool-specific hazards anticipated. ☐ ☐ ☐ ☐
14. Tools are tested daily to assure safety devices are operating properly. ☐ ☐ ☐ ☐
15. Damaged tools are removed from service until repaired. ☐ ☐ ☐ ☐
16. Power operated tools designed to accommodate guards and used. ☐ ☐ ☐ ☐
17. Rotating or moving parts on tools are properly guarded. ☐ ☐ ☐ ☐
18. Guards are provided at point of operation, nip points, rotating parts. ☐ ☐ ☐ ☐
19. Fluid used in hydraulic-powered tools is approved fire-resistant fluid. ☐ ☐ ☐ ☐



XXXV. CONCRETE AND MASONRY

XXXVI. AERIAL LIFTS



Appendix F

SWMU 5 Sampling and Analysis Report



TTNUS-FY00-0019

April 3, 2000

Project Number 0456

Commanding Officer
Department of the Navy
SOUTHNAVFACENGCOM
ATTN: Ms. Adrienne Wilson
2155 Eagle Drive
North Charleston, South Carolina 29406

**Reference: CLEAN Contract No. N62467-94-D-0888
Contract Task Order No. 0119**

**Subject: Sampling and Analysis Report
SWMU 5, Naval Station Mayport
Jacksonville, Florida**

Dear Ms. Wilson:

Tetra Tech NUS, Inc. (TtNUS) is pleased to submit this Sampling and Analysis Letter Report for the referenced Contract Task Order (CTO). This report was prepared for the U.S. Navy Southern Division Naval Facilities Engineering Command under CTO-0119, for the Comprehensive Long-term Environmental Action Navy (CLEAN) Contract Number N62467-94-D-0888. The contents of this report document the field work, results, and recommendations for delineation of elevated arsenic concentrations in surface soil at solid waste management unit (SWMU) 5.

SWMU 5 is located southwest of the U.S. Naval Station (NAVSTA) Mayport Turning Basin and is comprised of a landfill operated from 1965 to 1985 as a trench and fill and surface disposal site. Currently, SWMU 5 consists of a prairie hammock, and has an area that is used for vehicle storage by active duty and retired personnel. Both the Navy and U.S. Coast Guard have electronic installations at this site (ABB-Environmental Services, Inc. [ABB-ES], 1996).

A Resource Conservation and Recovery Act (RCRA) Facility Investigation of Group I landfills at NAVSTA Mayport, including SWMU 5, was concluded in March 1996. As a result, nonresidential Land Use Controls (LUCs) were put in place on the SWMU but a Statement of Basis was never promulgated. The LUC was based on the detection of Aroclor-1245, benzo(a)pyrene, and various metals in soil samples at concentrations that exceeded their Florida Department of Environmental Protection (FDEP) residential soil cleanup target levels (ABB-ES, 1996).

The FDEP industrial standard for arsenic has changed since the RFI was issued in 1996 (ABB-ES, 1996). The current industrial Direct Exposure Limit (DEL) for arsenic in soil is 3.7 milligrams per kilogram (mg/kg) (Chapter 62-777, FAC, Table 2). Since no Statement of Basis exists for the SWMU 5, it is subject to the current regulations. Two surface soil samples collected at SWMU 5 during the 1996 investigation contained concentrations of arsenic above the current DEL. The purpose of this investigation is to delineate surface soil arsenic concentrations surrounding these two hot spots. A map of the ABB-ES sample locations is shown in **Figure 1**.

Phase I sampling and analysis of surface soil was performed in March 2000 to delineate arsenic contamination around previous samples 05SS01301 and 05SS01501 (referred to by TTNUS as MPT-5-SS13 and MPT-5-SS15, respectively). A total of eight surface soil samples (from 0 to 1 foot below land surface [bls]) were collected approximately five feet in a north, south, east, and west direction from the historic locations, as shown in **Figure 2**. A summary of the analytical results is provided in **Table 1**. Arsenic concentrations above the industrial DEL were detected in sample MPT-5-SS1501-01, 7.3 mg/kg.

Phase II sampling and analysis at SWMU 5 was conducted approximately one week later to delineate the arsenic contamination around sample MPT-5-SS1501-01. A total of three surface soil samples were collected from 0 to 1 foot bls. The samples were taken approximately five feet in a north, east, and west direction from sample location MPT-5-SS1501-01, as shown in **Figure 2**. Arsenic concentrations in all three samples were below the industrial DEL for arsenic, **Table 1**.

Data obtained in this investigation indicates arsenic concentrations did not exceed soil screening values from the USEPA Region IV Ecological Risk Assessment Bulletin (August 11, 1999), but did exceed the requirements in Chapter 62-777, FAC. Arsenic concentrations exceeding the industrial DELs in Chapter 62-777, FAC have been delineated around ABB-ES surface soil samples 05SS1301 (MPT-5-SS13) and 05SS1501 (MPT-5-SS15). Remediation of the surface soil in the approximate area indicated in **Figure 2** is recommended in order to bring SWMU 5 into compliance with LUC requirements for nonresidential land use.

If you have any questions with regard to this submittal, please contact Terry Hansen at (850) 385-9899.

Very truly yours,

Terry Hansen
Task Order Manager

Debbie Wroblewski
Program Manager

TH/jee

Enclosures (4)

Cc: Mr. Randy Bishop (NAVSTA Mayport)
Mr. Craig Benedikt (USEPA Region IV)
Mr. Jim Cason (FDEP)
Mr. Charles Radford (CH2MHill)

Bcc: Ms. Debbie Wroblewski (Cover Letter Only)
Mr. Mark Perry/ File
file

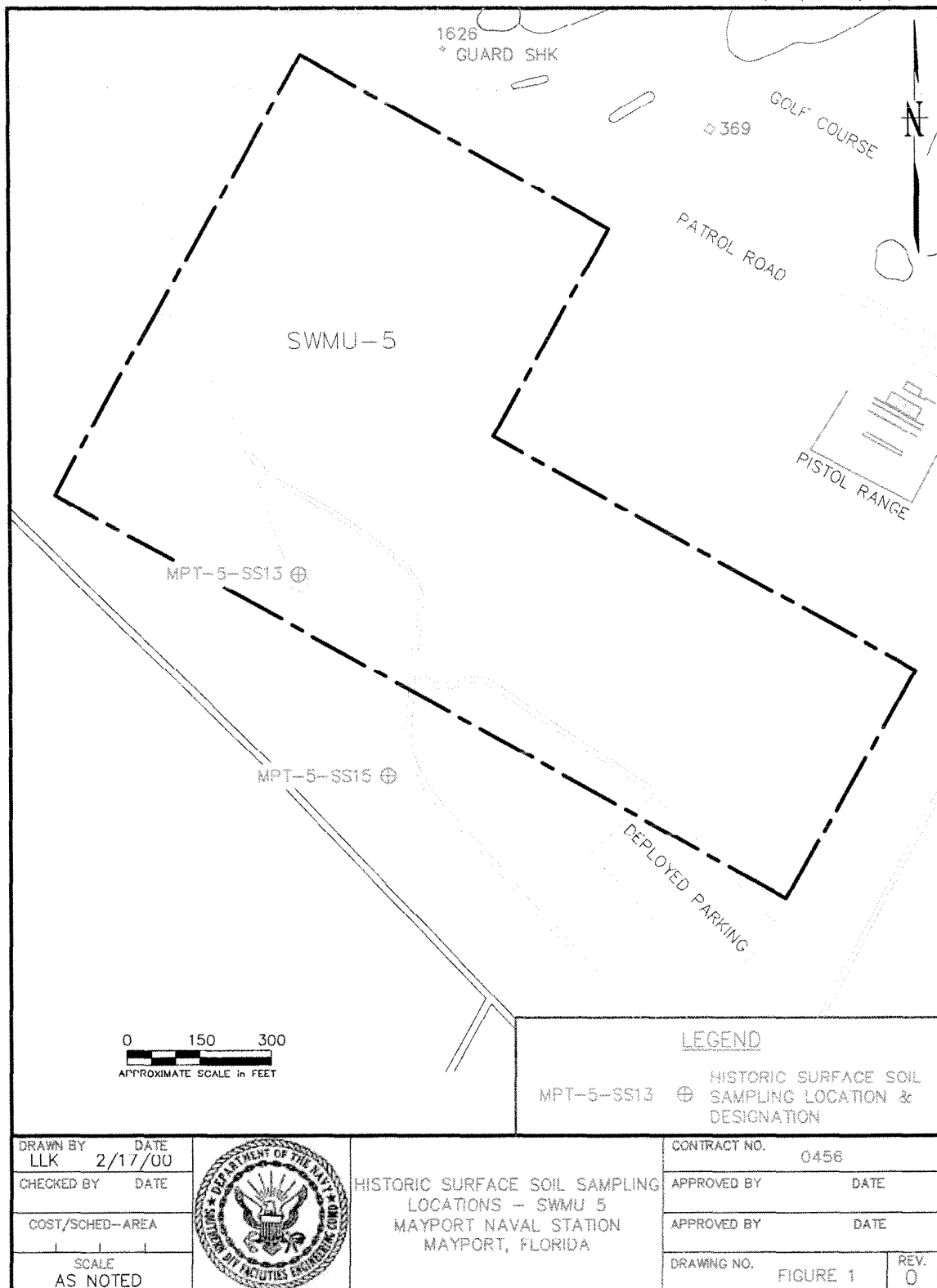


Table 1
Arsenic Detected in Surface Soil Samples at SWMU 5

Sampling and Analysis Report
U.S. Naval Station Mayport
Mayport, Florida

Sample No.	05SS01301	MPT-5-SS1301-01	MPT-5-SS1302-01	MPT-5-SS1303-01	MPT-5-SS1304-01
Sample Location	MPT-5-SS13	MPT-5-SS13	MPT-5-SS13	MPT-5-SS13	MPT-5-SS13
Collect Date	10-AUG--94	13-Mar-00	13-Mar-00	13-Mar-00	13-Mar-00
Sample Depth (bls ⁽¹⁾)	0 to 1	0 to 1	0 to 1	0 to 1	0 to 1
	SCTL ⁽²⁾ (mg/kg) DE ⁽³⁾ / SV ⁽⁴⁾	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Arsenic	3.7 / 10	4.2	1.2	1.8	1.7
Sample No.	05SS01501	MPT-5-SS1501-01	MPT-5-SS1502-01	MPT-5-SS1503-01	MPT-5-SS1504-01
Sample Location	MPT-5-SS15	MPT-5-SS15	MPT-5-SS15	MPT-5-SS15	MPT-5-SS15
Collect Date	09-SEP--94	13-Mar-00	13-Mar-00	13-Mar-00	13-Mar-00
Sample Depth (bls ⁽¹⁾)	0 to 1	0 to 1	0 to 1	0 to 1	0 to 1
	SCTL ⁽²⁾ (mg/kg) DE ⁽³⁾ / SV ⁽⁴⁾	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Arsenic	3.7 / 10	6.9	7.3	2.1	1.3
Sample No.	MPT-5-SS1505-01	MPT-5-SS1506-01	MPT-5-SS1507-01		
Sample Location	MPT-5-SS15	MPT-5-SS15	MPT-5-SS15		
Collect Date	23-Mar-00	23-Mar-00	23-Mar-00		
Sample Depth (bls ⁽¹⁾)	0 to 1	0 to 1	0 to 1		
	SCTL ⁽²⁾ (mg/kg) DE ⁽³⁾ / SV ⁽⁴⁾	(mg/kg)	(mg/kg)	(mg/kg)	
Arsenic	3.7 / 10	1.9	1.9	2.0	

¹ bls = feet below land surface

² SCTL = Soil Cleanup Target Level

³ DE2 = Direct Exposure limit for industrial area from Chapter 62-777, F.A.C.

⁴ SV = Screening Value for soils from EPA Region IV Ecological Risk Assessment Bulletins (August 11, 1999)

Bold numbers are above SCTLs from Chapter 62-777, F.A.C.